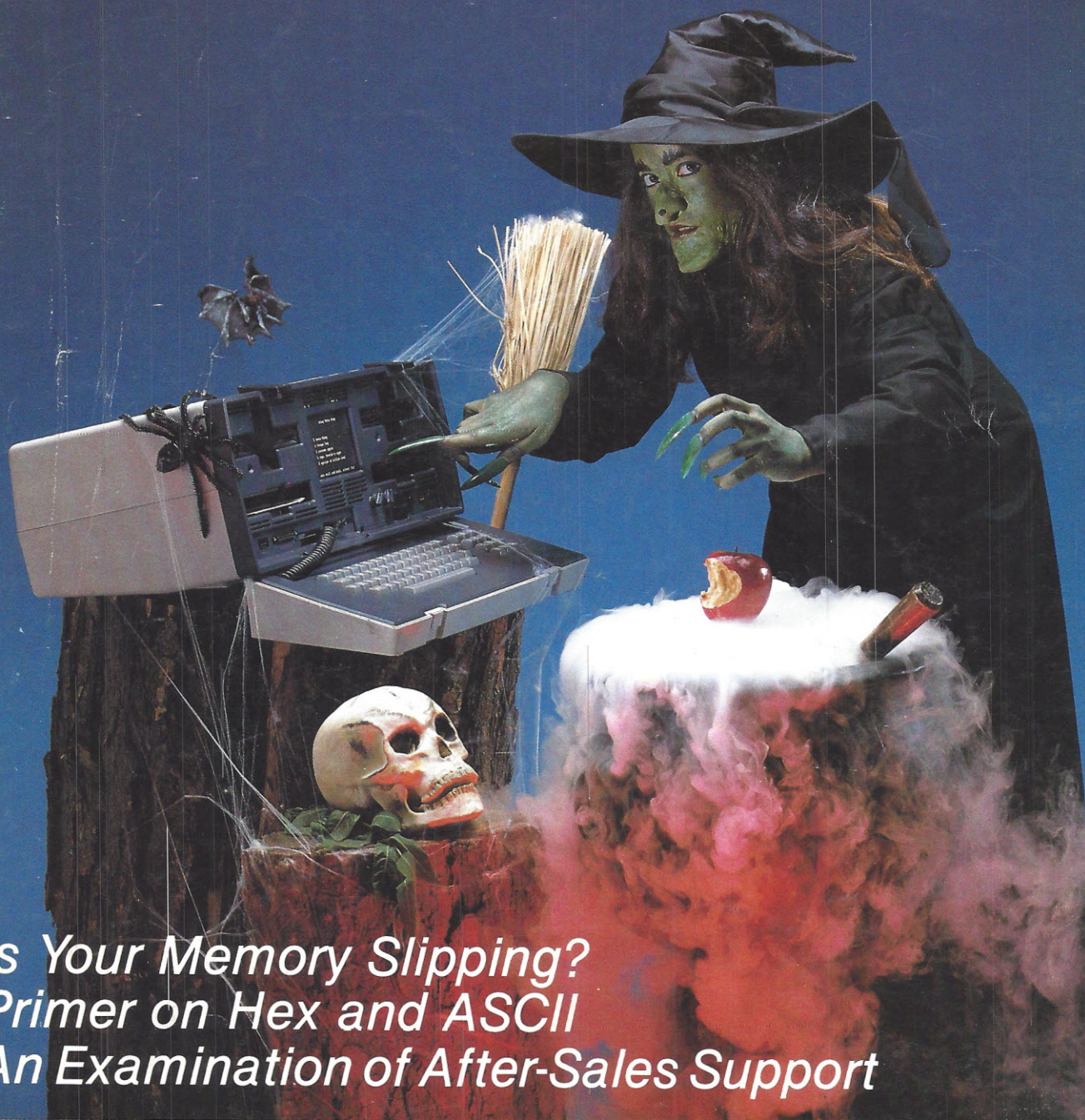


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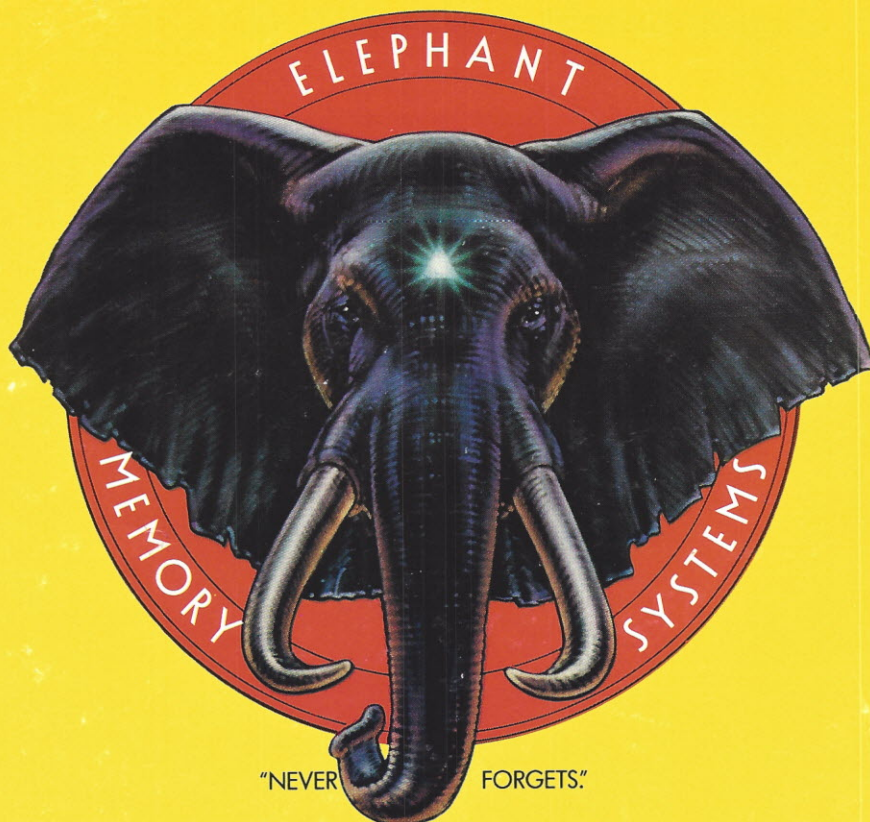
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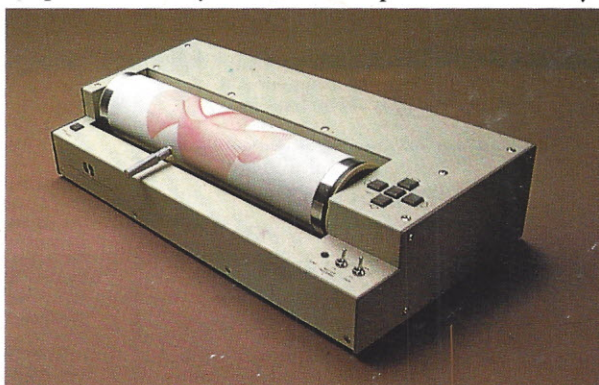
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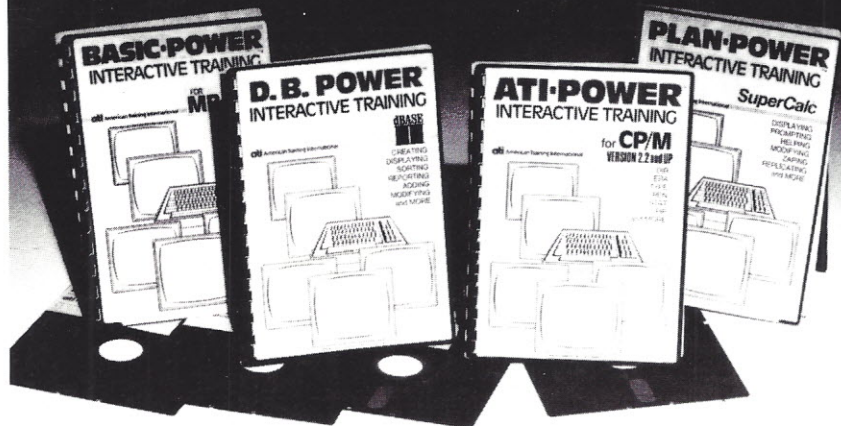
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Start Up

Ah, yes, another issue for you to peruse.

It's still difficult for me to believe that this is the third issue of a magazine dedicated to a computer that wasn't even being manufactured 14 short months ago (as I write this). Indeed, there is so much to be amazed at here at Osborne central that I often find myself wondering if we really did everything it seems we did during the last year.

For instance: in our first year of existence we produced about 50,000 machines. That number will double in about three months. Or maybe this: in less than six months we became one of the top 20 microcomputer software firms (in terms of gross revenue from sales). Perhaps this statistic might interest you: in slightly over 12 months we've created over 1000 pages of information and documentation for the Osborne 1—that's the equivalent of four full-length novels.

Add to the list a special segment on *60 Minutes*, articles reporting our growth in *Fortune*, *Business Week*, and *Time*, and the *InfoWorld* award as Hardware Product of the Year, and you can see that 1981 and 1982 were busy and exciting times for us. But I don't need to gush these nicities at you—you're probably just as aware of them as we are. No, the point I want to make from all this is that, despite where we've been, we still have lots of hard work to do if we are to achieve our goal of making the best possible computer products at the lowest possible cost to you, the users.

We're entering into what I like to call the buckle-down mode. We've proven that we can get good, dependable products out the door; we've proven that we can write about them; we've started a magazine to help support our product. But none of that is worth much if we stop now.

In the coming months you're going to hear a lot more about Osborne and the computers we make. The options you've been waiting for will start to appear in fast order; software for the machine will become more plentiful and just plain better; and the magazine will bring you even more information.

And we're listening. Those reader surveys that so many of you filled out and returned to us have valuable information that will help us respond to your needs. We didn't know that so many of you had Epson printers (over 50 percent of Osborne owners) and we certainly didn't expect so many requests for FORTRAN and Pascal, or else we would have had our versions of them ready by now. Needless to say, what you tell us you want is important. and you'll be seeing more of your requests fulfilled in the coming months.

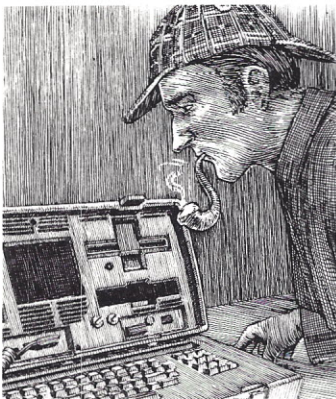
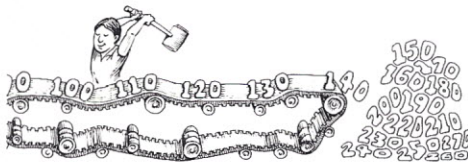
My message to you, dear reader, is that we're extremely proud of what we've managed to accomplish in so short a time. But we wouldn't be where we are today without you. We certainly won't forget you, but I do want to make sure that you hear us when we say that we *want* your input. Perhaps I shouldn't be saying this—I received SEVERAL HUNDRED letters to the editor within 14 days after the first issue was mailed—but we enjoy hearing from you.

So, drop us a note from time to time and tell us how we're doing. If we do something very right or very wrong, don't hesitate to congratulate or damn us. The company whose product you use is a very conscientious one, and we're going to keep it that way.

Thom Hogan
Publisher



In this and future issues we hope to aid you in "de-hexing" your computer through a potpourri of tips and information designed to take the mystery out of computing.

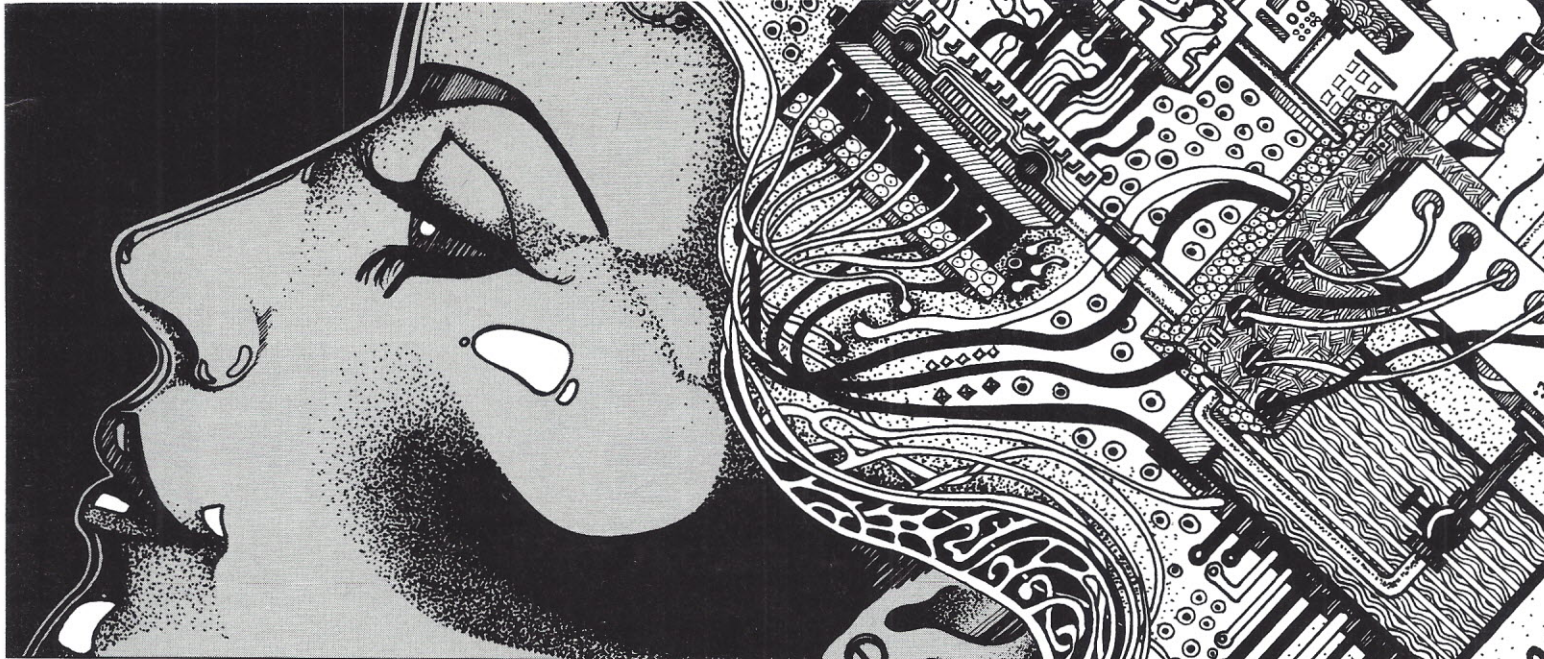


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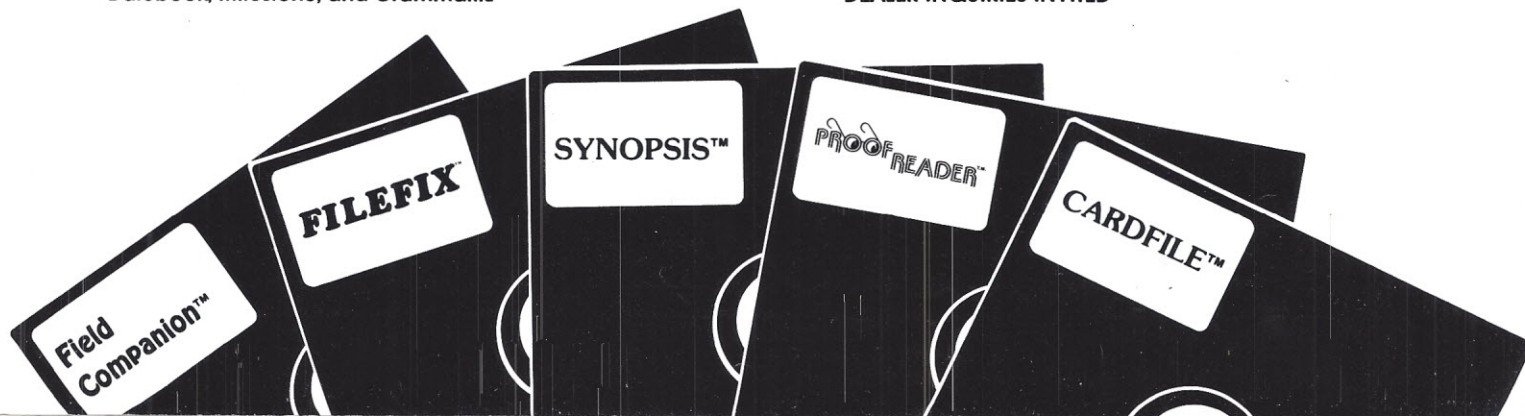
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Is There Support After The Sale?

by Adam Osborne

What level of after sales support should you expect of the dealer who sold you your microcomputer?

In order to grow, the microcomputer industry has had to attract a customer base who know nothing about computers—and would like to keep it that way. They buy a microcomputer because it is one of those conveniences of the modern electronic age, along with video recorders and electric typewriters. They buy a microcomputer to do word processing, or financial calculations, or whatever. And if our industry is to continue growing then we must learn how to accommodate this emerging, technically unsophisticated customer base.

Customers should be able to get all of their questions answered, needs attended to, and additional services supplied without ever having to talk directly with the manufacturer. Would you expect to call the Sony factory if your video recorder started displaying streaky images? Of course not.

Yet, all too frequently, the manufacturer is the first person you think of calling when your microcomputer starts acting up.

Why?

First let us look at dealer support from the dealer's viewpoint.

Competent microcomputer dealers know that providing excellent after-

sales support is very good for business. Well-supported customers are repeat customers; and they provide referrals. Moreover, after-sales support can be very profitable. Customers rarely mind paying for value. But there are three problems facing the microcomputer dealer:

1. Different types of microcomputers require totally different levels of support.
2. Customers rarely understand that the microcomputer dealer is in business to make a profit, which means that support must be paid for.
3. The best-intentioned dealer can rarely find enough competent personnel to provide the level of support to which they might aspire.

First, consider how the type of support a dealer must give depends on the nature of the microcomputer systems sold.

At one extreme there are the "hobbyist" microcomputers which can be sold board by board. Dealers must be prepared to provide a great deal of very technical support when selling this type of product. But the customer buying a "hobby" microcomputer is usually pretty sophisticated.

At the other end of the spectrum you get the totally unsophisticated customer buying an Osborne 1 to use as a word processor, or with Super-

Calc. This customer will likely never write a program, and could care less what is inside the computer, so long as it keeps working. This customer, in theory, requires far less support; but then, the customer is likely to be very unsophisticated.

No dealer can hope to handle properly both ends of this spectrum. The dealer must choose the types of product he wishes to sell, then he must gear up to support the products of his choice.

The next step is to make sure that the customer understands very clearly, and up front, what comes free and what they will be charged for.

The wise dealer will routinely offer the type of assistance that customers routinely demand. This should in-

clude short courses describing WordStar and SuperCalc for all Osborne 1 customers.

Very few people go out to buy a microcomputer. They usually want to buy a solution to a problem.

How much of this does the customer pay for, and how much does the customer get free? Providing charges are reasonable, customers usually do not mind paying for assistance. They object to paying and getting nothing for their money.

Now let us look at after-sales support from the customer's viewpoint.

Very few people go out to buy a microcomputer. They usually want to buy a solution to a problem. They want to do word processing instead of typing, or get more financial calculations done, or whatever.

The bottom line is that the customer bought the microcomputer for a specific purpose, and unless the customer can use the microcomputer to achieve that purpose, the money they spent might have well been poured down a rat hole.

Dealers and manufacturers may complain about the silly questions they are frequently asked by naive customers, but pragmatic people know that these questions will come, and if we, the manufacturers and dealers want to stay in business, then we had better be prepared to handle naive customers. That being the case the customer should be able to ask questions, however naive, without

having to apologize for asking.

Customers will usually turn first to the dealer because the dealer is local, whereas the manufacturer may well be half a continent away. If the dealer cannot help, then the customer turns to the manufacturer.

It is just that simple.

It would be naive to assume that customers will ever change.

People are people. If we want to sell more microcomputers to people then we must be prepared to cope with people's needs. That is the end of that.

It would be equally naive to assume that dealers and manufacturers currently provide adequate after-sales support.

But that will change.

Those who do not provide adequate after-sales support will not remain in business much longer.

What are the solutions?

For the store, the solution will come with time as more well trained store personnel graduate from our infant industry.

The challenge facing manufacturers is to provide better educational materials.

Computers do not become simpler just because they become less expensive. As computers become cheaper, stores cannot be expected to handle the same educational load out of a shrinking absolute dollar profit. Manufacturers must learn how to create educational materials that allow customers to teach themselves how to use a newly purchased microcomputer. These educational materials must teach quickly and painlessly. The customer will not walk away from two hours of self-instruction knowing everything there is to know about the microcomputer. But the customer should be able to make it play.

The challenge for the next two years is not how to build cheaper or better hardware; the challenge is to create better user training material.



Dr. Adam Osborne at the West Coast Computer Fair press conference in March.

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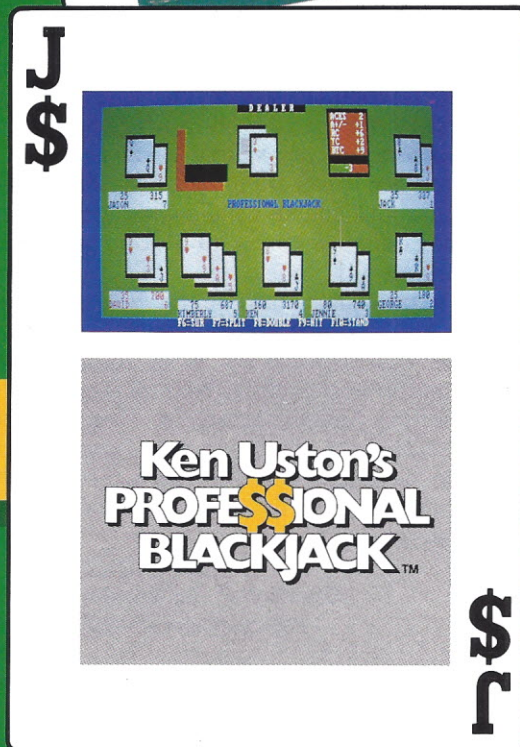
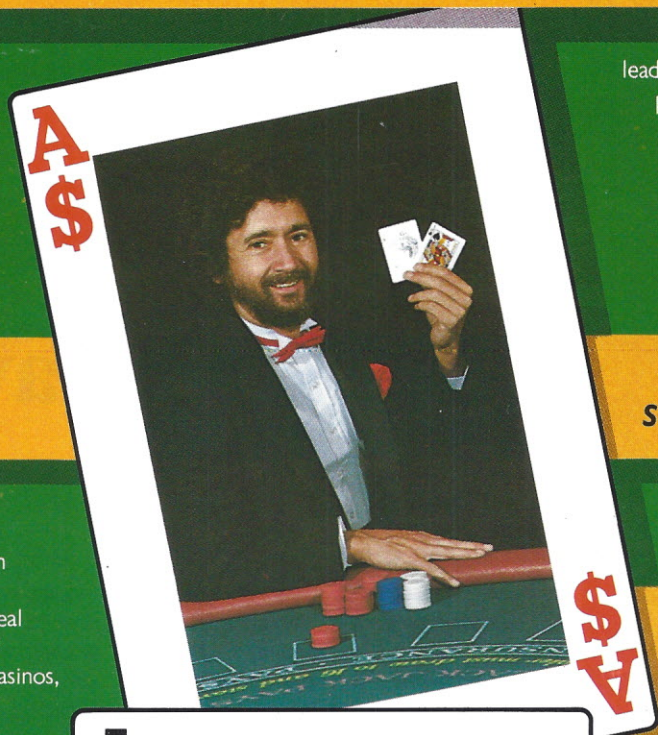
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Display shows actual photograph of IBM PC version. Apple color graphics and Osborne monochrome graphics are similar.

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Letters
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The Ayes Have It

Perfectly Pleased

Because one of the people mentioned in the first issue of Osborne's *The Portable Companion* questioned the expertise of dealers, I feel a need to respond from my own experience.

I can sincerely say that, especially when it comes to service, I have never purchased a major product which has had better service support. And in a day when many are quick to sell you things, but slow to stand behind them when things go wrong, that's very important.

In particular I have found the Santa Ana regional service center, and Bob who heads it up, to be totally supportive and helpful in keeping my Osborne running smoothly. Consequently, from the standpoint of after-sale support alone, I have been recommending the Osborne computer to others.

Ron Whittaker
Director of Broadcasting
Pepperdine University

Wants WordStar Patches

The premiere issue of your magazine was very informative. Nearly every square inch of it was useful—even the advertisements.

Since you are soliciting reader comments, I have a request to make: please publish the patch mnemonics for *all* of the WordStar patch table. The mnemonics for the printer controls (e.g., BLDSTR and PALT) appear in the reference guide, but many

others would also be useful. For instance, how do I set the default margin to 52 instead of 65? How do I set the default line spacing to 2 instead of 1? I am sure these patches are easy to make, but I'm helpless without the right information.

David Price
Midlothian, VA

We'll be following up on Mr. Price's request in the near future. One thing that's holding us up right now is that we want to publish the patches to both the current version (2.26) and the updated version (3.0) we are about to release. —th

Some Random Comments

I was very happy to receive the first issue of *The Portable Companion*. It was a tremendous public relations step.

The article on WordStar patching was especially timely for me as I had just become aware (through the users' group) of some of the things that can be done.

The most valuable function that your magazine can perform, in my opinion, is software evaluation and reporting on what various programs configured for the Osborne can do. I would also like to see update information and corrections to the User's Guide. Nearly all microcomputer documentation is very poor, and, while the User's Guide is better than many, there is still room for improve-

ment. I am sending some suggestions for this. I especially applaud your intent to provide ongoing CalcAids.

If you can keep the quality of the magazine up (and I believe the bimonthly publication schedule is very wise) you will multiply the value of my Osborne 1 manifold.

Ralph Bashor
Lakewood, CO

Mr. Bashor presents a number of comments that deserve some return comment. Since Osborne publishes the magazine, and since Osborne also publishes software, it seems unnatural to us to review software within the magazine. Nevertheless, we hope that the User Group section, which is not written or edited by Osborne personnel, will eventually feature product reviews. All software sent to us for evaluation is being routed to the User Group Liaison. We will, however, be putting together some "comparison" articles, ones which describe the features of a number of related products.

On the subject of documentation, we couldn't agree more. It is our intention to eventually make The Portable Companion a monthly publication, but we'll need your help (and subscription!) to do so. So, keep those cards and letters coming; those of you out there brave enough to write an article shouldn't hesitate to do so—we're looking for information to print for all levels and abilities.

Grafrax Sub- and Superscripts

Your magazine came out at a very good time for me; right when I got my Osborne. I was especially pleased to find the article by Jim Woolley about modifying WordStar for the Epson printer. To make a long story short, it didn't work very well on my printer with Grafrax Plus. This worked out OK because it forced me to learn what I was doing rather than just follow the recipe. I made the following changes in my copy to suit

my needs in my job. I still have a few problems with it in terms of turning off the double strike after using a superscript. If I used control code 48H instead of 54H it messes things up. Got any suggestions? Thanx.

The Epson printers with Grafrax Plus don't need to use the PSCRLF or PSHALF for sub- and superscripting. I installed sub- and superscripting as follows, using the instructions already there in WordStar:

```
Superscript ON (^PT)
ROLUP:                =03
ROLUP: +1              =1B
ROLUP: +2              =53
ROLUP: +3              =00
```

```
Subscript ON (^PV)
ROLDOW:               =03
ROLDOW +1             =1B
ROLDOW: +2            =53
ROLDOW: +3            =01
```

```
Sub- and Superscript
OFF
(^PA)
```

```
PALT:                 =02
PALT: +1              =1B
PALT: +2              =48
```

No Name Given

My Epson manual does not show 54H turning the Sub- and superscript modes OFF. Instead, 5EH is listed as turning OFF these modes and unidirectional printing—th

How About Us?

I have enjoyed my Osborne for months and now look forward to your new publication. There is a section missing though—a really user friendly down-to-basics column for timid beginners (my plateau)! I know there are many of us—I was slow and steady on a microwave and cuisinart, too. So, develop a column with simple programs, imaginative computer uses and a gentle touch.

Lynn Blakely
Honolulu, Hawaii

Unfair Comparison Repaired

I think Jim Wooley's article

"WordStar with Epson" in the first issue of the magazine was somewhat informative; however, I thought it was biased because there was no comparison between our Pretty Print package and his patch recipe. It is obvious that Jim discredited our product because we have the only commercially available package that we know of, to date, that sold for \$85.

I feel that Jim was portrayed as a "Good Guy" because he gave part of a greatly needed solution to Osborne owners of an EPSON dot matrix printer. On the other hand, although our name was not mentioned in the article (but our city was), we were portrayed as the "Bad Guys" because we charge for a complete solution for most dot matrix printers.

continued on page 92

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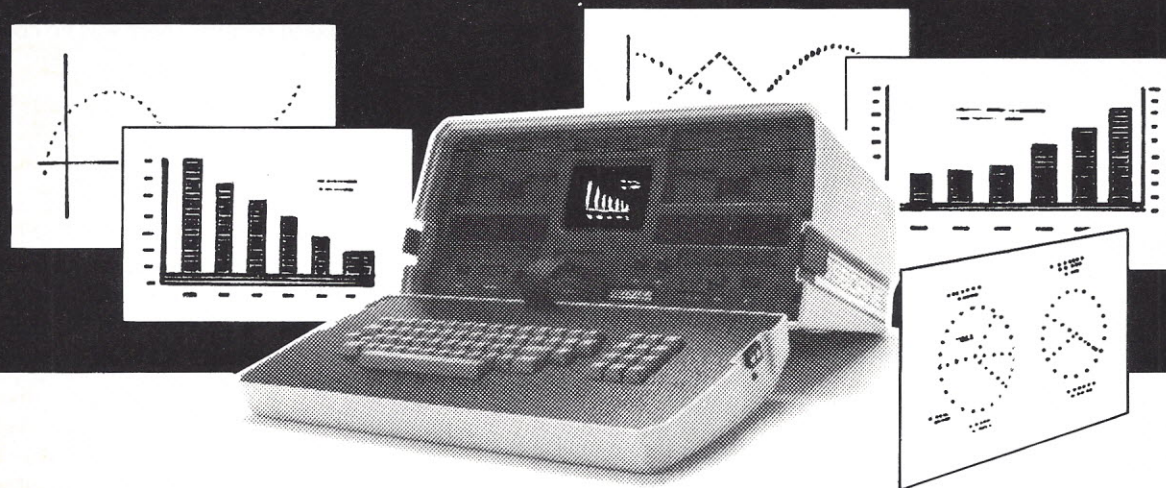
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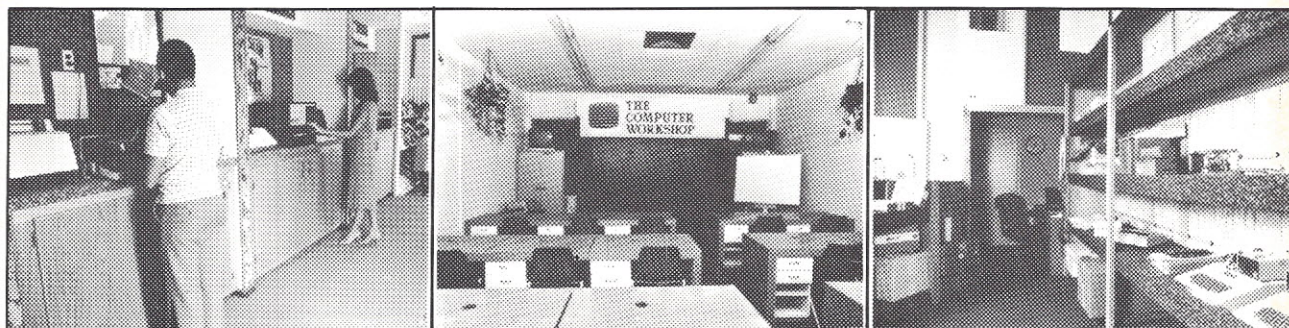


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Once More Into the Fray . . .

by Thom Hogan

The Wizard felt so sorry for the postman here in Hayward this month that he went out and bought the poor fellow a new pickup truck to carry all the questions you readers are sending. Now, if I could only figure out how to type responses on five computers at once . . .

Q: I've been trying to use MailMerge, but every time I use the FI dot command I get files that don't start at the left margin. Other times I get a blank page inserted between two perfectly typed pages. What am I doing wrong?

A: It's hidden spaces and carriage returns that are probably causing most of your problem; in addition, you probably have a PA dot command at the end of one of your files.

MailMerge doesn't like extra information in a file, not even a single space or line. You should edit all your files and make sure that no extra spaces are lingering at the end of any lines, that no blank lines (that you don't otherwise want) are included, and that you DO NOT end the file with a page break (.PA). In fact, most files shouldn't be ended with even a carriage return; just leave the cursor one character to the right of the last character typed on your page.

If you're confused about how to use MailMerge, see Mike Iannamico's

The Processed Word column in this issue of *The Portable Companion*; he'll show you one way to use this handy program.

Q: I just bought a Smith Corona TP1, but can't figure out how to connect it to my Osborne 1. I thought I could just buy a standard Centronics parallel cable, but that doesn't seem to be the case.

A: True, Smith Corona did do some unusual things with their parallel interface and this results in a non-standard cable having to be created.

Normally ground would be found on pins 19, 20, 21, 29, or 30 on the printer; each of these ground lines would be connected to provide "cleaner" (less noisy) signals to the printer. On the TP1, some of the aforementioned pins are not connected to anything, meaning they can't be used. We recommend the following cable configuration:

Osborne 1		TP1
pin 1	DATA 1	pin 2
2	DATA 5	6
3	DATA 2	3
4	DATA 6	7
5	DATA 3	4
6	DATA 7	8
7	DATA 4	5
8	DATA 8	9
11	STROBE	1

12	GROUND	16
15	BUSY	11
16	GROUND	17
19	SELECT	13

The cable should be kept to a length not exceeding eight feet.

Because the TP1 always inserts a line feed character when it receives a carriage return, you must install the printer with WordStar's INSTALL program as a "Teletype-Like Printer With Backspacing Capabilities." This will assure you can implement Boldface, Underlining, and other multistrike commands. Use the Osborne SETUP program to change the protocol to "Centronics."

Q: What is a null modem cable, and what do I use it for?

A: You'll want to check out Brad Baldwin's article "I/O, I/O, Its Off To Work We Go" on interfacing the RS-232 port, elsewhere in this issue. But, to answer your question, a null modem cable is one which exchanges the data transmit and receive lines between two devices. A normal, minimal serial cable for the Osborne 1 looks like this:

Osborne 1		RS-232 device
pin 1	GROUND	pin 1
2	TXDATA	2
3	RXDATA	3
7	GROUND	7

A null modem cable changes this to:

Osborne 1		RS-232 device
pin 1	GROUND	pin 1
2	TXDATA	3

3	RXDATA	2
7	GROUND	7

Almost every modem you might connect to the Osborne requires such a null modem cable. Many printers, however, require the standard serial cable, which we described first. If you're having problems deciding which cable you need, consult with your dealer.

Q: I have need to enter protected code words into a program (words that are typed in, but cannot be seen by the user). How do I do this in BASIC?

A: This routine is simple to create using MBASIC. The secret is the use of the INKEY\$ or INPUT\$ () statements. INKEY\$ allows you to put the value of what the user types into a string for later processing. Unfortunately, if the user hasn't pressed a key when INKEY\$ is processed, no value is placed into the string. Therefore, you must always use INKEY\$ in a statement like this:

```
1000 ANSWER$ = INKEY$: IF
LEN(ANSWER$) = 0 THEN 1000
```

To wait for a user to type a password using INKEY\$, you'd have to code something akin to this:

```
1000 RESPONSE$ = " "
1010 RESPONSE$ = INKEY$: IF
LEN (RESPONSE$) = 0 THEN 1010
1020 IF
LEFT$(RESPONSE$(1,1)) = 13
THEN END:'USER TYPED
RETURN
1030 ANSWER$ = ANSWER$ +
RESPONSE$
1040 GOTO 1000
```

If you have a predetermined length of input you want a user to enter, but not see on the screen, you can use the INPUT\$ () statement. Within the parentheses you enter the number of characters the statement is to wait for. Thus, the above routine simplifies to this:

```
1000 ANSWER$ = INKEY$
(NUMBER%)
```

where NUMBER% is the number of characters the user is to type. One

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problem with the INPUT\$() statement is that it considers the carriage return as a key in its count, thus, if you want a user to type the password "THOM" followed by a carriage return, you would have to use an INKEY\$(5) statement, not INKEY\$(4) as it may first seem.

Q: Do you send out the names and addresses of your customers?

A: With few exceptions, no. To do so would be a violation of our customer's privacy. In fact, we have only used this list to provide further information to our customers, as in the case of the upgrade to the keyboard and manual, or in the case of the first issue of this magazine. Occasionally we also use a few names from the registered owner list to ascertain the level of support and cooperation they received from their local dealer.

The exceptions to our rule are those companies that provide us software. In order to provide the software in the first place, we entered into agreements that require us to provide the names and addresses of all registered Osborne owners to these companies. We cannot force these com-

panies not to mail anything to the names on the list we provide. At the same time, however, to my knowledge none of these companies has sold the list to others for promotional use.

In short, we use the list of Osborne 1 owners as a means of communication with them, if, and when, necessary.

Q: Why don't you put slim-line or 3-inch disk drives in the Osborne 1? Then you'd have room for a bigger screen.

A: When the Osborne 1 was first designed, slim-line 5¼-inch drives did not exist. The 3-inch drives you refer to are only available from a single source—Sony—a situation that we try to avoid.

Remember, we make a lot of computers. When new products are introduced, they exist in small quantities. We cannot afford to tie up our manufacturing of computers with promises of delivery of drives. Currently, we require over 20,000 disk drives a month, and this number is rapidly growing. When quantities of slim-line drives are available to us

from multiple vendors, we would consider making a switch, if nothing else, to save some weight and to make better use of the air space inside the machine.

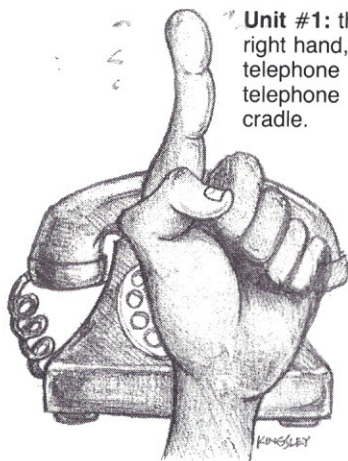
Q: How about 80-track drives, or double-sided ones?

A: We know you folks want more disk storage space, and we're working on it.

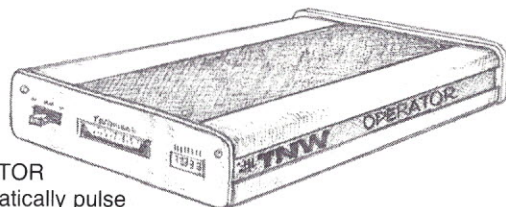
You have to remember, however, that almost none of the components available in the microcomputer industry were designed for the portable environment our computer relishes. In some cases, components are available that, according to their specifications, shouldn't even be shipped via UPS or the Postal Service!

Our initial opinion concerning 80-track and double-sided drives was that both would require too much periodic maintenance to be considered. The alignment tolerances on the 80-track drives, for instance, are extremely critical for proper operation; this is doubly true if you also have double density. Some of the newer drives use different head-

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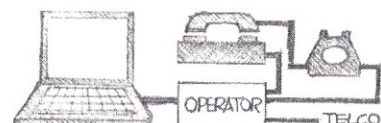
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positioning technology and hold better promise, though. One small problem that hasn't been taken care of yet is the price. At present, to offer 80-track drives as an option would make their list price about half that of the computer itself. Double-sided drives are even more expensive.

Technically speaking, there is nothing to stop someone from substituting higher capacity drives for the ones we supply. Only a few changes would have to be made to the software, most notably in the COPY program and the CP/M BIOS (Basic Input Output System).

Q: I need a 16-bit option, when can I get one?

A: I would have to question your

reasoning for wanting a 16-bit processor at this time. Software for 16-bit CPUs is just now becoming available and is still a long way from maturing to the state of 8-bit software.

Add to this the fact that the promise of increased computing speed is often never met, and you can see why I question your reasoning.

In reality, the only good, solid, substantiated reason to get a 16-bit computer at this time is for the increased memory that is available. Even this, though, isn't the nirvana that it first seems. The IBM Personal Computer, for example, is capable of having more internal memory than it has disk capacity on two drives. How, then, do you make efficient use of this added memory?

With software, of course, and that brings me back to my first observation. Besides, I happen to have 128K of memory in my Apple II computer (I don't use it much anymore, as you may guess) so you can bet it won't be long before someone figures out how to expand the Osborne 1's memory.

I'm sure that Osborne will someday be making 16-bit computers. But I suspect that such a computer will result from the maturation of the software marketplace, not from any technological or state-of-the-art considerations. We build computers to be used, not to be worshipped.



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Users' Group

How to Start a FOG or Incorporating Your Users' Group

By Frank Morton

It took us longer than we anticipated, but it is now official—FOG is a Corporation!!! The filing date was June 29, 1982. The official name is FIRST OSBORNE GROUP (FOG was pre-empted, but we can use it as a service mark; and the term "Inc." is neither required nor used here). It has been decided that FOG will become a networked association of affiliated local chapters.

But let me back up a bit here. It all started one meeting when I asked for a consensus of opinion from the assembled multitude and Bob Kavinsky asked "When are we going to get a constitution and bylaws for this group"? If you know me, you have probably guessed that the next step was my talking Bob into "volunteering" as the Chairperson of a Constitution & bylaws Committee.

We were fortunate to get as volunteers Bill Houk, Steve Von Till, and Henry Parsons who is a member of PicoNet (it must have been a workshop meeting). These three are associated with law in their Professional lives. After the first meeting or so they were joined by Jim Schenkel of the San Francisco FOG Group. He is experienced with non-profit corporate law.

It seemed desirable to form a legal organization to protect the members and officers, as well as establish some guidelines for conducting business. This committee worked diligently and forged the basis of a set of bylaws, which should serve us very well. Henry has become very busy and no longer participates, but I thank him and the entire committee for getting us off to an excellent start; it was a JOB WELL DONE!

The bylaws are now finished. They are essentially a foundation for the

corporation to build upon. The bylaws establish FOG as a non-profit corporation organized for charitable, scientific and educational purpose. They call for a board of nine trustees elected by the entire general membership.

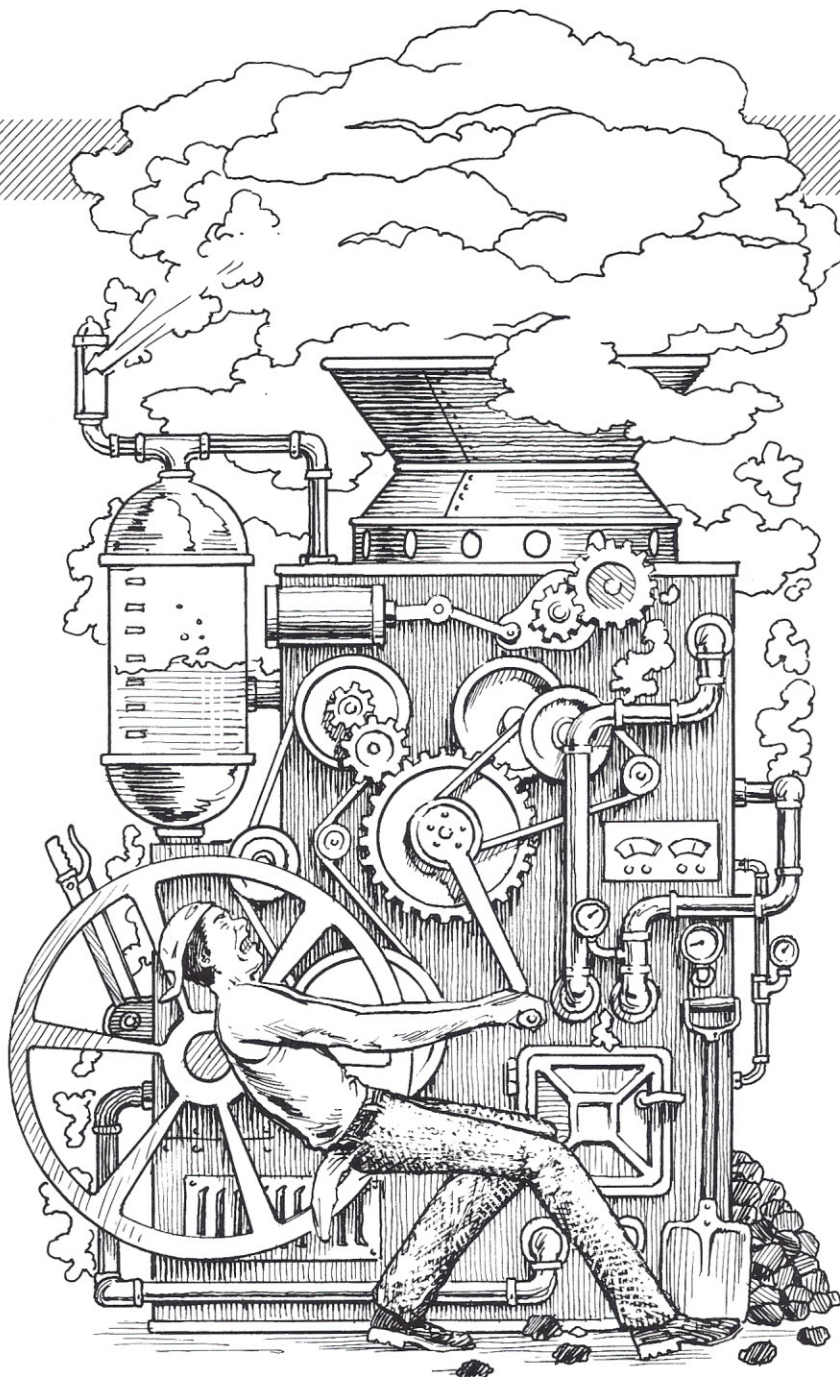
The four elected officers will be chosen by, and answer to the board. The Board establishes all operating policies. The Chairman of the Board is the President. He has no vote except to break a tie and he is not considered a Trustee. Additional officers are appointed by the President with the concurrence of the Board.

The Trustees are answerable to the membership at large. Provisions are

made for amendments to the bylaws. This setup should provide for expedience and simplicity of operation while still leaving ultimate control in the hands of the members.

A copy of the bylaws will be made available in response to the request of any member.

The first official Board of Trustees meeting was held on the 15th of July, just before our regular monthly meeting at the DYSAN Auditorium. As recommended by our legal counsel, I chose nine persons as the Interim Board, and as might be expected they elected the existing FOG Officers to act in the interim until an election of a



new Board of Trustees (March 1982).
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Corp. Secretary Bob Kavinsky

—Additional—

Editor David Oates
Disk Librarian Jim Woolley
Corr. Secretary Gale Rhoades
Asst. Treasurer Jim Lantz
Activities Chmn. Craig Chun

The Board includes a good cross-section with 5 founding members, 2 Lawyers, 2 financial experts, 2 relative newcomers, etc. I know that they will work hard to set up an organization which should function smoothly, pave the way for future growth, represent all the members, and create bylaws

modifications which will respond to the needs and desires of the general membership.

A few policies have already been established. The Board decided to employ Gale Rhoades as a part-time contract employee on a trial basis. This should be no surprise, since she has been devoting so many hours on our behalf, and we need to be assured of her continued efforts. The Board agreed to underwrite a telephone line for David Oates, so that he can receive all your FOGHORN submissions on modem!

The Board agreed that FOG will be an association of affiliated chapters, with one chapter being a Chapter-at-Large for all those too far away from others to be able to participate in a Local Chapter. All individual members will be equal (only one class of membership). The full membership fee will be payable to the Corporation, however a 25% rebate of each member's dues will be paid back to the designated Local Chapter to help defray local expenses. EVERY paid-up member has a vote in The Corporation (either in person, by mail, or by Proxy)!!!

The Board of Trustees voted to rebate the 25% to any "authorized Local FOG Chapter"; which is defined

as a group of FOG members or potential FOG members whose proposed bylaws and officers are accepted by the FOG Board of Trustees. We have a set of suggested Local bylaws (with appropriate blanks). They will be provided to anyone who asks for them. The intent is to assure the Board that the proposed Local Chapter will act as a separate legal entity, but with the same general intent and precepts as the parent FOG organization; and that there will be sufficient local officers to keep the chapter viable and in good communication with the other chapters.

The whole idea is to create an affiliated set of networked, autonomous Local Chapters which will be united by the FOGHORN and the Corporate Officers acting under the direction of the Board of Trustees who are elected by the general membership. In this way the Local Chapters can best suit the needs of the Local membership, while the Board and Officers can relay and disseminate information to and between the Chapters, as well as represent the entire membership. In this way we can let our collected views and desires be known to the Osborne Computer Corporation and others in the world of personal computing.

Continued on next page

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Users' Group

In fact, although our primary thrust has been (and will certainly continue to be) towards owners of Osborne Computers, there is no reason why we should not include as members of FOG all persons interested in any type of portable personal computer using CP/M as an operating system!!!

The policy of members paying the entire dues (presently \$24 per year) to FOG with a rebate being paid back to the Local Chapters has been chosen as the policy of the current Board. It will begin with dues of new members submitted with Chapter status application, or with the renewal dues of existing members who wish to be affiliated with an authorized local chapter. To have made the rebate retroactive for all existing members would have potentially wiped out most of the existing treasury.

The 25% rebate was chosen to help defray some of the local chapter expenses while still maintaining enough income to support the expense of the FOGHORN and Disk Library activity. In many cases local chapters will need to find additional sources of revenue to support local newsletters and or other activities that they may want to participate in. As a matter of fact, FOG will need to go to additional efforts to raise funds if our

activities are to be maintained without increasing the annual dues.

Each designated local chapter will be a legal entity recognized by the FOG Corporation. It should have its own governing body (Board?) and at least a President, a Treasurer, and a Disk Librarian. Example bylaws and method of operation for the local chapters will be made available to those interested in forming chapters. Interested groups should notify us at:

FOG
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We are excited about our progress! Although a Silicon Valley Board was designated in the interim for expediency, we want to satisfy the wishes of the majority of all members, everywhere, and we want to encourage your active participation. Your comments are solicited.

How To Start Your Own Chapter

I have been asked from time to time "How does one go about creating a USERS' GROUP?". The correct answer no doubt varies with location, persons involved, and a variety of other factors. I will be happy to tell you how FOG was started, with emphasis on tips that hopefully will be useful, wherever you may be.

To start with, although the end result may vary, I think the primary purpose for starting a Users' Group is to form a means of communication with other persons with similar equipment, problems, and general interests so that all may learn through a mutual self-help program. There is an added benefit that most members of the group have no external bias to slant their teachings or recommendations.

The first and most important thing in starting a Users' Group is to get help! Find others who not only want to belong to the group, but are actually willing to help. Those who make suggestions are best qualified to implement their own ideas! Do not be afraid to ask for help! Delegate assignments just as much as the other members will let you! Otherwise, you wind up doing it all yourself; in which case you might as well start a business in teaching about computers.

It is most beneficial if you can enlist the aid of a local Osborne Dealership and its sales people. Granted, their viewpoint is biased, but there is a lot that they can do to help. With the right kind of approach you can help the Dealer realize that there is a lot that your Group can do for them! In addition to making your members familiar with the Dealer's store and its person-

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nel, participation of its salespersons in your users' group can be very educational for the salespersons and thereby benefit the Dealer.

If there is a nearby users' group for some other purpose in operation, they may help. You can at least study how they operate. I was fortunate; Byron McKay had already started a local CP/M Users' Group called Pico-Net. With their help I started collecting names at the local Dealer from other Osborne purchasers until we had 15 or so interested persons.

The Digital Deli—a local computer store—extended to FOG the 5-10% Users' Group Discount that Pico-Net members enjoy. Of course that helped to recruit new FOG members, but it has also brought a lot of return traffic to the Deli for Software and Peripherals. If you can establish a good rapport with the local Dealer, it can be mutually beneficial.

An extremely important item of concern in any Computer Users' Group is that you DO NOT CONDONE PIRACY or support it in any way! The concept of a Computer Users' Group unfortunately has a bad connotation with many software manufacturers and many retailers because some Groups have been lax about this issue. The reputation of "Organized Pirates"

holding meetings for no purpose other than swapping any software that members can get their hands on is an image that we have to constantly fight by explicitly taking a uniform stand against exchange of Proprietary Software!!!

Finding a suitable meeting place is a big challenge! In many cases it is convenient to hold the first meeting or so at the Dealers' Store. Usually the Group will soon be too large for the space. It is just as well, because the group will feel more open and less constrained in their conversation if the meeting is elsewhere.

It is best to enlist the help of founding members to find a suitable location. Often a Savings & Loan will have a meeting room that is offered for public groups, or a local College may make available some space. Occasionally there is suitable space available in a local municipal building. With a business machine such as the Osborne there is an increased chance that one of the members may have a business which could accommodate the group.

Naturally, the idea is to find a suitably large facility, preferably with many electrical outlets, since the Osborne is so protable. We are exceptionally fortunate to learn through the

Pico-Net group that DYSAN Corporation has an excellent auditorium that they make available to Computer User Groups. With luck you might be able to find a computer-related business with an eye to good Public Relations.

I think the size of the group is important. If it becomes too large, it loses the intimacy of the Self-Help exchange that was originally intended! Personally, I believe between 20-100 members is desirable. At the main FOG meeting at Santa Clara we have tried to overcome potential oversize problems three ways. We publish the FOGHORN in an attempt to provide news and information to those who are not able to come to the meeting. We have created a second monthly meeting for the purpose of a Self-Help tutorial Workshop, and are now forming a third meeting on a Saturday. Finally, we have actively supported splinter groups in the greater Bay Area to keep Santa Clara from getting too crowded and to make FOG available at other Bay Area locations without requiring too much long distance travel.

At the main meeting on the 3rd Thurs. we try to have some demonstrations of interesting new equipment and some presentations from persons who can give us useful, up to date in-

Continued on next page

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The Source and the Osborne 1

by Bill Houk

The Osborne 1 is so versatile, it can be used as a peripheral terminal to communicate with large main-frame computers. I use mine to talk to The Source, a shared-time mainframe located in the Washington D.C. area. The basic requirements are an Osborne 1 loaded with the proper software, a modem, a telephone, and a password or other means of entry to the mainframe. The software is readily available to Osborne owners, since one very fine version is called MODEM 7 and is located on Disk 1 of the FOG library.

With MODEM 7 in Drive A, I put a formatted disk in Drive B. At the A>, enter **MDM70S**. A menu will appear; at the end of the menu is COMMAND:

I use a 300-baud modem, so I type **T.300 B:<NEWFILE.TXT>**, in the event that I want to save any part of the session. Then I dial up The Source by calling either Telenet or Tymnet or a local number. The log-in procedures are clearly covered in The Source

User's Manual. If a record of entire session is required, I enter > **Y** (Control Y), to turn on memory buffers. If I do not want to record the whole session (the usual case) another > **Y** will toggle off memory. At the end of the session, I enter > **E** to get the main menu, and then before touching anything else, I enter **WRT**, to empty the buffer and close NEWFILE.TXT on Disk B. This gives as complete a record of the session as is required.

To load data into The Source, I get to (the Source) Command Level to select an option which will accept text input, such as POST (a bulletin board), Mail (Electronic Mail) or File. The following is a sequence which I recently used to demonstrate this capability. The Source response is in upper case, while the Osborne-originated text is in lower case. The Source File which I am creating is called OSBORNE. The file up-loaded is called TESTFILE.TXT, created under WordStar, option N. (Do not use Option D, as the text will have unseen bits, which may make the transfer behave unpredictably unless you strip out the WordStar spacings with **TEXCLEAN.COM** Or **PIP.COM**.)

Command: **T.300 B:newfile.txt**

< cr > (Modem 7 command to get into terminal mode, with a file opened on Drive B for recording purposes.)

Source Log-on procedures:

WELCOME TO THE SOURCE
1. OVERVIEW OF THE SOURCE
2. INSTRUCTIONS
3. THE SOURCE MENU
4. COMMAND LEVEL
5. TODAY

ENTER ITEM NUMBER (4 to get to Command Level)

> (Source Command prompt)

> NAME.TYP (Enter Osborne filename)

BEGIN

Now you type > **T** and enter the filename to be transferred. **(b:Testfile.txt < cr >)** or only < cr > to cancel. At this point, the text prepared and stored on Drive B will scroll on the screen as it is being transmitted.

Transfer complete (Modem 7 message)

(Source Command prompt)

The contents of the file is now on Source. One last item: the file created on WordStar must end with a double < cr > to get back into Source Command Level.



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Who's In Charge Here?

by Jim Sack

Do you ever have the feeling that "Ozzie" has a split personality? Sometimes it clanks and whirrs, sometimes she purrs, sometimes he squawks. I recognize a variety of tones when my Ozzie talks to me (when it talks to me), and adjust my conversation accordingly.

A related difficulty arises in talking about (rather than to) Ozzie. For example, when we say CBASIC or MBASIC, sometimes we mean the 'language system' and other times the language itself, or then again maybe we're referring to the actual program which has been written in the language by making use of the language system software.

Much of this schizophrenia and confusion can be traced to the fact that Ozzie, like all computers, can run programs which run programs (which etc.). I like to keep all this straight by thinking of a hierarchy of control—for example, when running my MBASIC program, CHECKBAL.BAS (which helps me balance my checkbook), I see a message on the screen which says:

Enter amount for check number 472?—

I might describe the hierarchy of control (at that moment) as follows:

1. I am in immediate control, since nothing will happen until I type something in.
2. The MBASIC program CHECKBAL.BAS is next in the chain of control, since its statements specify what happens next.
3. Since the program is written in the MBASIC language, the MBASIC system (more precisely, the interpreter part of the program MBASIC.COM) is next-in-command. The language system software is in charge of doing whatever the statements say to do.

Beep The Beeper

by Bob Briggs

Looking through the FOG and CP/M disk libraries the other day I noticed an interesting program called "TEACH" that purported to teach morse code. The problem was that the programmer had never heard of the Osborne 1 and had not taught "TEACH" how to beep the OSBORNE beeper. Of course, beeping the beeper is quite mandatory for a morse code program.

Exploring things documented (like the schematics OSBORNE sent me) and the undocumented (like most of the OSBORNE CBIOS), I found how to beep it, which is what this article is about.

The most obvious way to beep the beeper is to use the ASCII BELL character. This is done by hitting control G when you have the CP/M prompt, or by the statement PRINT CHR\$(7) in BASIC. However, this isn't very satisfactory if you want to vary the length of the beep for the dits and dahs of morse code.

There are at least a couple of ways to control the duration of the beep when beeping the beeper. I'll demonstrate one way with a program written in MBASIC and another way with an assembly language routine.

As shown on sheet 5 of the schematics, the beeper (labeled audio alarm) is driven from bit 5 of port B of a 6821 peripheral interface adapter (PIA) chip. Also evident is that in addition to the beeper, this chip controls what is displayed on the screen and turns the two disk drive motors on and off. Also, the only way to talk to this chip is in shadow mode.

When CBIOS (the CP/M Basic Input/Output System) sends data out to the screen, it checks EF62 hex in RAM to see whether the beeper and the disk drive motors should be on or off. Bit 5 controls the beeper, bit 6 drive A, and bit 7 drive B. Bits 0 through 4 apparently have something to do with the vertical position of the text on the screen (which line is on which row). The following BASIC program demonstrates control of the beeper by setting bit 5 on or off and then sending a character to the screen in order to output data via the PIA chip.

```

10 REM: PROGRAM TO BEEP THE BEEPER
20 INPUT "ENTER A NUMBER FROM 1 TO 5, THEN HIT CR: ",N
30 IF N > 5 THEN 120: REM: EXIT IF N > 5
40 FOR I = 1 TO N: GOSUB 60: NEXT I: REM: BEEP N TIMES
50 GOTO 20: REM: LET'S DO IT AGAIN
60 POKE &HEF62,&H20:REM:BEEPER FLAG ON
70 PRINT I: REM: TURN ON BEEPER
80 FOR J = 1 TO 250: NEXT J: REM: SETS BEEP DURATION
90 POKE&HEF62,0: REM: BEEPER FLAG OFF
100 PRINT:REM:MUST WRITE TO SCREEN TO AFFECT BEEPER
110 RETURN
120 PRINT:PRINT"EXIT IF > 5":PRINT
130 END

```

This next routine, which must be located above 4000H to avoid "The Shadow," turns on the beeper for a duration determined by the LXI B and LXI D instructions. The routine drives the PIA directly rather than going through CBIOS as in the MBASIC program above.

LABEL	INSTRUCTION	COMMENTS
BEEP	CALL OEBC9H	;ENTER SHADOW MODE
	LDA 2C02H	;GET PIA STATUS
	ORI 20H	;SET BIT 5
	STA 2C02H	;BELL ON
	LXI B,2	;SET DELAY LENGTH
	CALL DLY1	;WAIT
	LDA 2C02H	;GET PIA STATUS
	ANI 0DFH	;RESET BIT 5
	STA 2C02H	;BELL OFF
	CALL OEBC9H	;LEAVE SHADOW MODE
DLY1	RET	;EXIT
DLY2	LXI D,0	;DELAY SUBROUTINE
	DCX D	
	MOV A,D	
	ORA A	
	JNZ DLY2	
	DCR C	
	JNZ DLY1	
	RET	

In my OSBORNE (MONITOR 1.2) the routines at EBC9 and EBD7 contain the code for entering and exiting shadow mode. If this is not true for your OSBORNE, you'll have to find them, or use the routines shown on page 8-2 of the OSBORNE 1 User's Guide (looseleaf version). Address 2C02 is Port B of the Video PIA. (page 8-38 of User's Guide)

4. Just for the record, the CP/M operating system is, of course, the ultimate piece of software in command. EVERYTHING happens by leave of CP/M, so-to-speak.

Now that I am off on this tangent, I hope you will bear with me while I get one more harangue off my chest. CP/M being a ubiquitous program, it's easy to forget it is a piece of software that acts as a go-between between our Osborne hardware and our 'applications programs.' One is tempted to think of CP/M as an appendage to the hardware; it makes the 'raw' hardware look like a smarter machine—a CP/M machine.

This is a very useful concept for describing what's going on. Hardly anyone talks to a naked computer; they talk to the CP/M-clothed machine. In fact, this concept can be carried further: when you put your BASIC diskette into Drive 'A' and press return, Osborne has cleverly arranged for automatic loading of the MBASIC software which then sits between you and CP/M. You don't have to say a word to the CP/M machine before Ozzie changes into an MBASIC machine by putting on that overcoat. Unless you make certain mistakes, it

Continued on next page

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is possible to do your business exclusively with MBASIC and never even know that CP/M is alive. So, now you know that when the 'OK' message disappears, and all you see is the funny little A>, your MBASIC machine has died and you are left face-to-screen with the CP/M machine. Ah soooo! To carry this picture to its limit, I might say that while the MBASIC program CHECKBAL.BAS is running, I am talking with a check-balancing machine.

In the trade jargon, what I have been describing is a series of 'virtual' machines, each built from some 'lower-level' machine by adding some software. From a specific point in this hierarchy, the programs built into the underlying machines cease to be thought of as 'programs,' but instead become part of the 'environment' seen by the user (or user-program) at that point—thus one sees the CP/M program called 'system software,' the MBASIC.COM program called a 'language support system,' etc.

I'm sure I haven't made this concept crystal clear to all, but don't be discouraged, it kind of grows on you. *Editor's Note: This article was originally printed in the newsletter of the San Diego Osborne Users Group and is reprinted here with their permission.*



3-Across Labels With WordStar

How do you print labels on the three across sheets? This is accomplished by first setting up the following dot commands at the beginning of the print command file:

.RM 132 (This forces a right margin of 132 columns.)
.PL 6 (This sets the page length to the length of each label with an extra line for the space between the labels.)
.MT 1 (This sets the top margin to one line.)
.MB 1 (This sets the bottom margin to one line.)
.PO 0 (This sets the left margin to the edge of the paper.)
.OP (This omits the page number.)
.DF FILENAME.TYP (This is the name of your address file.)
.RV name1,address1,city1,state1, zip1
.RV name2,address2,city2,state2, zip2
.RV name 3,address3,city3,state,3 zip3

You should set the tabs to 37 and 73 (clear all others) and set the right margin to 132 with hyphen help and right justification off.

You now list the variables (enclosed within "&") in the order you want them printed. On the first line of each label, you probably want the names. Enter **&name1&** starting in column one and follow it with **> P <cr>**. Your cursor will move down a line on the screen but the position will still say line 1, column 1. Press **TAB** to move to line 1, column 37 and enter **&name2& > P <cr>**. Again you will be down one line on the screen but the position will read line 1, column 1. Tab to position 73 and enter **&name3& <cr>** (Do not enter a **> P** before this last **<cr>**). Your position will now read line 2, column 1. Repeat the procedure for this and the other two lines on the labels.

Be aware that printing labels three across in this manner voids the "omit null variable" (/o) option.



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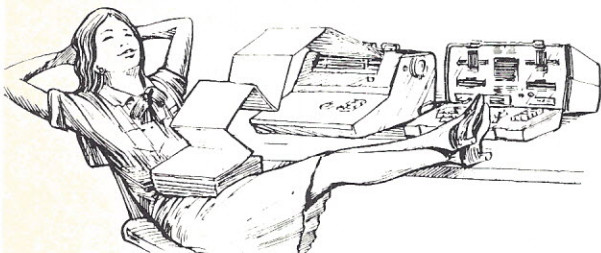
ODDS & ENDS

by Bob Briggs

A few odds and ends cropped up this month that I hope you will find interesting.

First, here's a trick for getting around a WordStar limitation when editing long documents. WordStar does not have a command to advance the cursor to an arbitrary page in a text file. I needed to make a correction on page 8 of a 15 page document I had just printed for final proofing. Unfortunately the cursor was on the top of page one as it usually is when you load a file for editing, and there is no command to advance to page 8. (Fortunately WordStar does allow you to start printing at page 8 after you have made your corrections, or at any time, for that matter.) So, how to get the cursor to page 8 with minimum fuss? Before hearing of the method described here I had been using >QQ>C and watching the screen advance slowly into the document.

A faster way is to count carriage returns using the >QF find command. >QF>N will find a hard or soft carriage return. Thus >QF>N<CR>#<CR> will count # lines because every line ends in a hard or soft carriage return. So, to advance from the first page to the eighth page (assuming you are using WordStar's default of 55 lines per page) you can use the command >QF>N<CR>385<CR>. This advances the cursor by 7 pages since 7 times 55 equals 385 lines.



This next one is a little obscure, but for the record... A letter to the editor in the June issue of *Microcom-*

puting magazine gives a method for setting the baud rate to 9600 at the serial port. The SETUP program only allows 300 and 1200 baud. However, when I tried to get 9600 per the directions in the magazine, it went to 19,200 baud, which is at the upper limit for RS-232. The fastest modem you can buy will only go 2400 baud over public telephone lines, or 9600 baud over specially conditioned leased telephone lines, so this newly documented speed won't help much for transfer of data over the phone. However, for transferring files over a cable from one computer to another via the RS-232 port it should speed things up considerably.

Hallelujah! it finally got here. In yesterday's mail. The OSBORNE 1 *Users' Reference Guide* offered by mail for \$5 to owners of early serial number units that came with preliminary documentation. A big beautiful blue-covered spiral bound fat five hundred page plus collection of information for the Osborne 1 user. I assume it is nothing new to most Osborne owners because it is supposedly the same manual that is now being delivered with the computer. But there is a considerable amount of information that I did not have, so it was worth the \$5 to me.

For example, the commented source listing for the AUTOST.COM program is given as part of an assembly language tutorial on page 247. There is a useful chapter called System Specs. This chapter reveals that the Osborne 1 emulates the Televideo 920C terminal and gives the hex commands for manipulating the screen such as 1A hex (Control-Z) to clear the screen and home the cursor. Page 277 gives the RAM locations for the two tables defining the special function keys.

Although much improved from the preliminary documentation, the new manual remains laced with grammatical and spelling errors. The modem port pinout is defined two different ways. This is interesting considering Osborne's previous ex-

perience as a book publisher and the availability of spelling checking programs.

There are at least two items in the preliminary documentation that I could not find in the new manual. One is the explanation of how to pass arguments to assembly language programs via the MBASIC statement CALL, which is too complicated to explain here. The other is how to patch WordStar to display lines longer than 80 columns without line wrap. The Osborne 1 can handle up to 128 columns, as can my printer. The screen width can be patched using the name WID: in the INSTALL program, or changing the byte at 0249 hex with DDT. Use 120 columns or less (78 hex) or WordStar will clutter up the menu with the statement that screen widths wider than 120 have not been tested.



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Learn Morse Code On Your Osborne!

by Bob Briggs

The program TEACH from the CP/M User's library has been modified to work on the OSBORNE 1 and is now in the FOG library. This program will teach you morse code using the OSBORNE 1 beeper.

There are two programs: TEACH.ASM and TEACH.COM. All you need is TEACH.COM unless you want to modify the program, in which case you will need TEACH.ASM.

To run TEACH.COM, get the CP/M prompt A > or B >, depending on

which disk contains the program and then type TEACH <CR>. The screen will show a column of letters along the left margin, each followed by a row of asterisks.

Type any key to begin. Oh, the program will only recognize capital letters. You will hear the morse code for the letter G (dah dah dit) and you should type the letter G before the answer, which is G, appears on the screen. If you hit the correct key the answer will immediately be shown and

the next letter sent. If you hit the wrong key, after a short delay the answer will be shown and the letter repeated.

After you have responded correctly to the letter G a few times, the program will send you a new letter. The more correct answers, the more new letters.

You can check your progress by holding down the RETURN key until the screen shows the rows of asterisks again. The more correct responses you have given for a particular letter, the less asterisks on the row for that letter. The bottom row of asterisks, adjacent to the % sign, gives an average indication of your recent progress.

At this point you can continue by hitting any key, or you can start over by hitting ESC, or you can exit with CONTROL-C.

The speed is set pretty slow. You can vary the speed by modifying the program as follows.

1. Load the TEACH.ASM file with WordStar using the N command. Do NOT use the D command.
2. On the line FREQ EQU 4000 change the number 4000 to suit your fancy. I have tried 4000, 3000, and 2000 so you can be confident the program will work for these. The smaller the number, the faster the speed.
3. Save the modified program with the > KD command to a disk with about 30K or more free space remaining.
4. Remove the WordStar disk, insert the CP/M Utilities disk in drive A, press RESET, then press RETURN.
5. Place the disk containing TEACH.ASM in drive B.
6. Type ASM B:TEACH.BBZ. See OSBORNE 1 User's Guide page 6-4 (loose leaf version) if you want different options.
7. Type LOAD B:TEACH and wait.
8. Type B:TEACH to run the revised program.
9. You can erase the TEACH.HEX file after the LOAD command has finished.



User Group Update

Michael Rulison
Raleigh Osborne Computer Club (ROCC)
3256 Lewis Farm Road
Raleigh, NC 27607

Dennis Harris
Juneau Osborne User's Group
KTTO FM & TV
224 Fourth Street
Juneau, AK 99801

Joel Chabin
Marin Osborne User Group
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Scott Brown
Osborne Computer Owners Klub
PO Box 40429
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Michael Zinn
Osborne Users Group
Zinn Associates
15 Birch Lane
Greenwich, CT

John Gaudio
Denver Osborne Group (DOG)
PO Box 27826
Denver, CO 80227

Jim Hicks
Miami Osborne User's Group
7605 SW 71st Avenue
South Miami, FL 33143

John C. Van Horn
Greater Baltimore-Washington
Osborne Users Group
9218 May Day Court
Columbia, MD 21045


Zon Owen
Osborne Hawaii User's Group
1142 Hoolai St #201
Honolulu, HI 96814

In addition, user groups in Surrey, England, Sydney and Canberra, Australia, have been formed. Unfortunately, we've been provided only partially complete addresses for all three, so cannot print any more information this issue.

If you have formed a user group or special interest group specifically for the Osborne 1 computer, please let us know so that we can list your address in the next possible issue. In addition,

all user groups should officially identify themselves to Osborne Computer Corporation, by writing to:

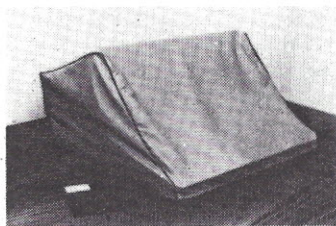
User Group Liaison
Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

Osborne Computer Corporation will be sending special packets of information to established user groups in the near future, so make sure that your user group gets on the mailing list. 

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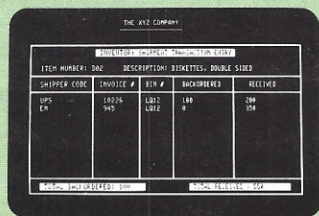
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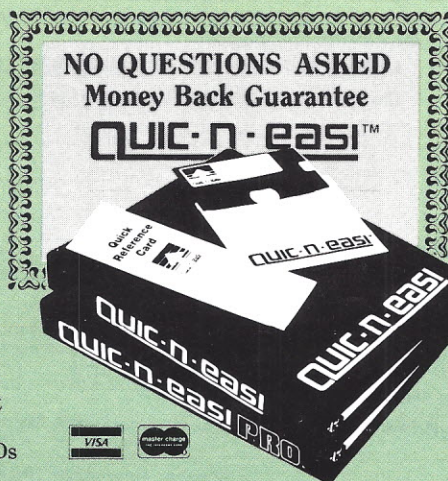
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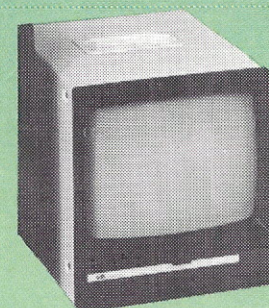
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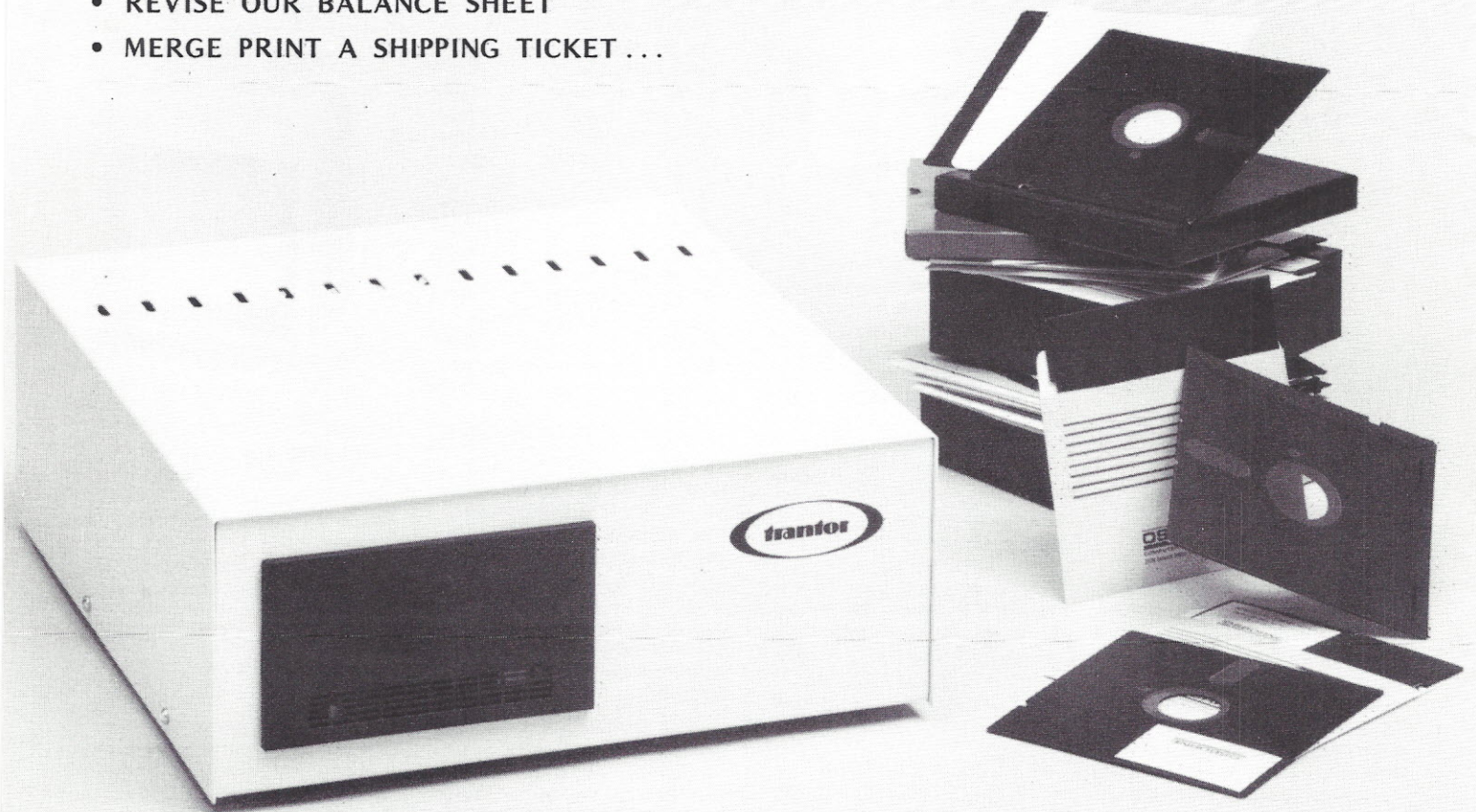
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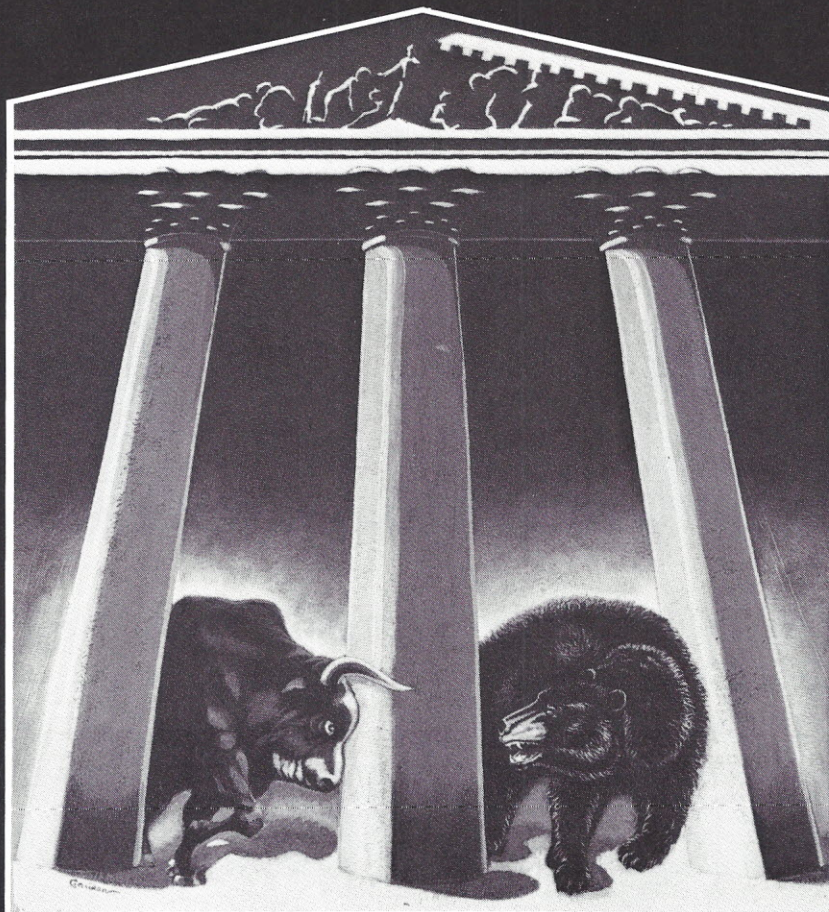
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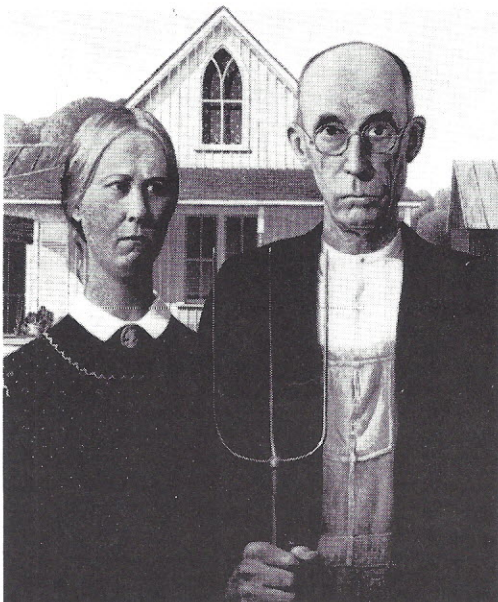
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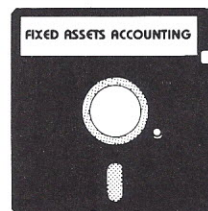
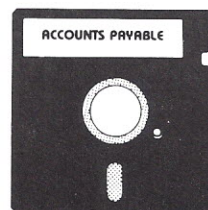
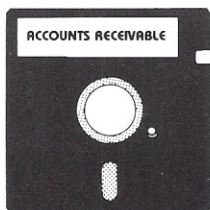
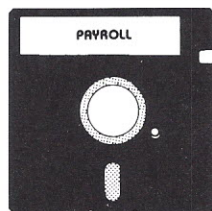
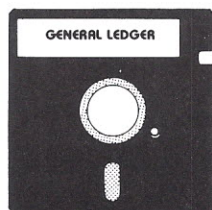
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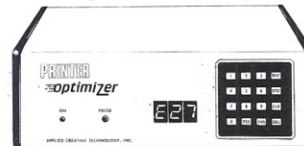
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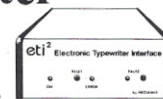
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Automatic Line Numbering

An MBASIC Solution

by Richard Drakeford

The Osborne 1 handles a multitude of numbers with a high degree of precision. Most humans find it easier to deal with general concepts and overall structures. When man looks at the sky he instantly discerns constellations, which he labels. A computer would more likely count each star and list its coordinates to the 12th decimal place.

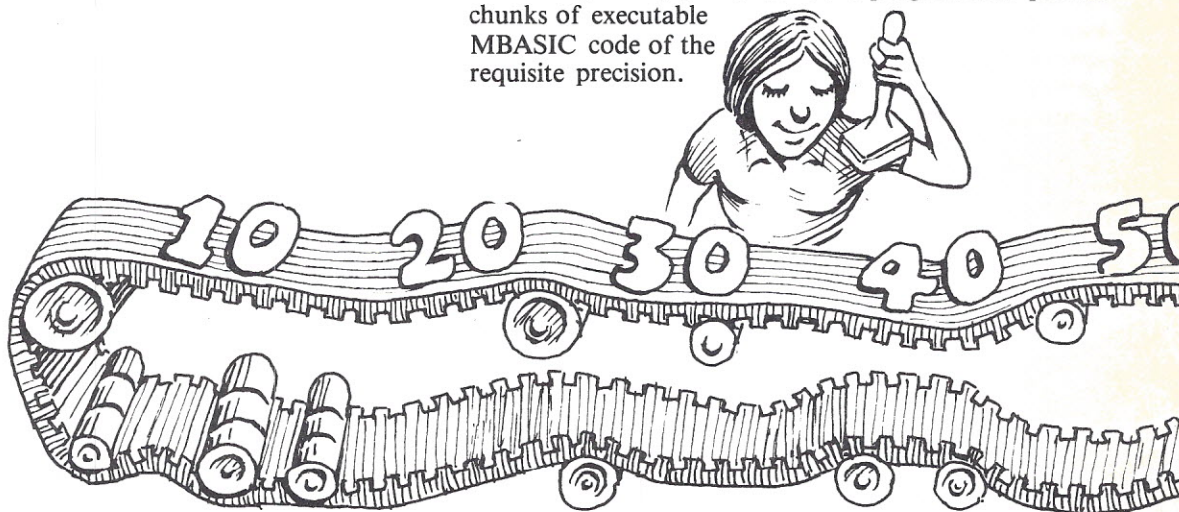
Unfortunately for we imprecise human beings, the vocabulary and syntax of the MBASIC language is not generalized and is terribly unforgiving of even the slightest human sloppiness. In particular, the strict necessity to number each line and keep accurate track of those encumbering line numbers is the kind of bothersome task many of us find frustrating.

Luckily for us, however, line numbers are the kind of detail work with which your Osborne 1 likes to assist. So let the Osborne handle those pesky line numbers: In just a minute you'll see how that's done.

If one problem for humans programming in MBASIC is the extreme precision required to create executable code, another is the difficulty of editing with MBASIC's limited line editor. Correcting mistakes, moving code around, and indenting your code to show the flow of control and improve human readability—all of these processes are hard to do when all you can access is a single line at a time. Programs in the process of being written seem as intractable as stone is to the sculptor with only one blunt chisel. And very few of us are Michelangelos.

It helps a great deal to do the bulk of your programming with the sharp tools of a word processor. You have easy access to a whole screen at one time instead of working line by line. Actually you have freedom of movement throughout the entire file.

The Osborne 1 comes equipped with WordStar—which has many very sharp tools. You can start with rough draft and piece by piece, refine the program into precise chunks of executable MBASIC code of the requisite precision.



How to create programs with WordStar

For programming, use WordStar's Nondocument mode, which makes ASCII-compatible files of words and symbols. This includes those files of MBASIC code under discussion, known as programs. A program is nothing but a file of language symbols and numbers; at least until it is loaded into the computer and run. A correctly configured program loads and runs whether it was written the hard way—in MBASIC—or the easier way, with WordStar.

Your first draft can be written in a pseudocode—a symbolic notation of your own devising, more or less in English, (see example) which makes the program logic as clear as you want it to be. As shorthand, personal abbreviations of one or two keystrokes can be used during drafting and later expanded automatically by WordStar. ("LP" could signify LPRINT during drafting. Later, use ^QA to find all "LPs" and replace them with LPRINT.) Use WordStar's place markers to jump around the program, from sub-routine to main code and back. If a line of code is to be repeated here and there, mark it as a block and copy it to wherever it is used again.

First-draft program modules can then be refined and translated module by module into precise MBASIC vocabulary and syntax. Once done, each module can be sent off into a file of its own and held. Final assembly of the entire program can be done by reading all the files into one master program (using WordStar's KR command).

Creating Those Pesky Line Numbers

The bugaboo of MBASIC programming is the requirement for line numbers. A solution to this problem is to forget about line numbers for a while: Do your programming within the text editor with NO line numbers: just leave them out. Let your Osborne number the lines for you when you have the sequences all doped out.

Besides the dreaded line numbers themselves, you have line number references within the program to contend with, following executable code statements like GOTO, IF...THEN, GOSUB and so forth. These are always a pain to deal with because you seldom know the exact numbers in the early stages of the program. Well, again, just forget about the numbers. Use temporary labels for a while until you find out what line numbers are going to

be assigned by the machine. Let the machine deal in numbers. Humans find it easier to deal in labels for concepts, like "Big Dipper" or ::dataentrysub."

To prepare for machine numbering, finish your final editing of the file you are working on. Use the cursor to move down the program text and put leading apostrophes on all your comment lines. Put leading colons on all lines you want to leave blank. Pretty up and point up the logic structure with indentations and blank lines that make the logical sequence clear. Delete any unwanted comments and other stuff that has turned out to be extraneous. Use ^KD to save the file.

Now to get the numbers on the lines. Exit WordStar (or use "R") to run the all-purpose program PIP. Using PIP's [N2] parameter, copy the file into a new file. For example, you might use the command:

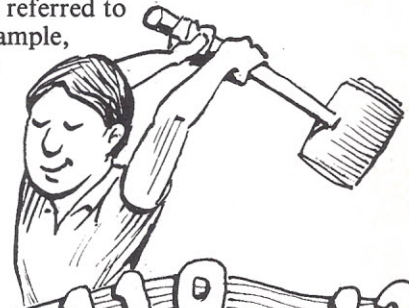
PIP B: PROGRAM.

NBR = B:PROGRAM.DFT[N2]

with the titles indicating the progression from the draft version written with WordStar's nondocument mode, to the line-numbered version.

PIP's [N2] parameter installs a 6-digit number at the start of each line. Most of the digits are leading zeros. The first line is 000001, for example. These are followed by a TAB character (which is only two spaces wide when the numbers occupy the first six columns—the first tab position is at the eighth column). Then comes the text: the program code lines and comments you wrote unnumbered. The PIP-installed line numbers are readable by MBASIC even though all those leading zeros make them look different. And, except for the internal line number references within the program, your program would now be loadable and runnable.

To clear up those internal line number references following GOSUB's AND GOTO's, etc., reaccess the numbered version of the file using WordStar's nondocument mode. Inspect the program by coursing through it and visually detect the line numbers at which your subroutines and referred-to sequences of code begin. Make a pencil note of the line number which starts each sequence you have referred to in the program. For example, you might find that the data entry subroutine



starts on line 000017, or 17. (Or if using a pencil is too old-fashioned, make a quick note on the screen, mark it as a block and move it to the front of the file where you'll need it. Later you can delete it.)

Now, find and replace your internal reference labels starting from the beginning of the file (This is important if you don't want to miss any). Use WordStar's **QA** find and replace operation to find the labels you used for references and replace them with line numbers. For example, you might find "dataentrysub" and replace it with "17." Code lines which read "GOSUB dataentrysub" would now read "GOSUB 17." When you have located all the internal line number references and switched them from labels to numbers, your program is loadable by MBASIC.

Save the edited file. Now, make sure that the file name includes a type designation of .BAS if you have been using something else. Exit WordStar.

Invoke your MBASIC interpreter and tell it to load the program. Note that when MBASIC loads the program, it ignores all the leading Os. You won't see them if you LIST the program. At this point they are still in the file, however.

As your final editing step, use MBASIC's RENUM command to get more suitable line numbers onto the program. (PIP's numbers start at 1 and increment by ones which leaves you no room for modifications later on. MBASIC's RENUM numbers have intervals of 10 between them.) This RENUM also strips off all the leading zeros and automatically changes the internal line number references. Tell the program to RUN and, provided your program logic is valid, it should execute. If you find that debugging is necessary, and it often is, now is time enough to grind away using MBASIC's limited line editing facilities and required line number entries.

Finally use MBASIC's SAVE command to file the program once more, with the neat, new line numbers. If this is your final, *final* version you can go ahead and use a regular save command. But if you will want to massage the program again using WordStar, SAVE it with the "A" option (as an ASCII file). Of course, if this is a module of a greater program yet to be assembled,

definitely save it in ASCII format so that it can later be merged.

As an optional final touch, if you want to close up the spaces between the new line numbers and the actual lines, use WordStar to run an automatic find and replace operation. For find, enter a TAB (by pressing the TAB key once). For replace with, enter a space or two. Use the global repeating options of the **QA** command and the tabs will be removed in a jiffy. (But programs run fine if you leave the tabs in.)

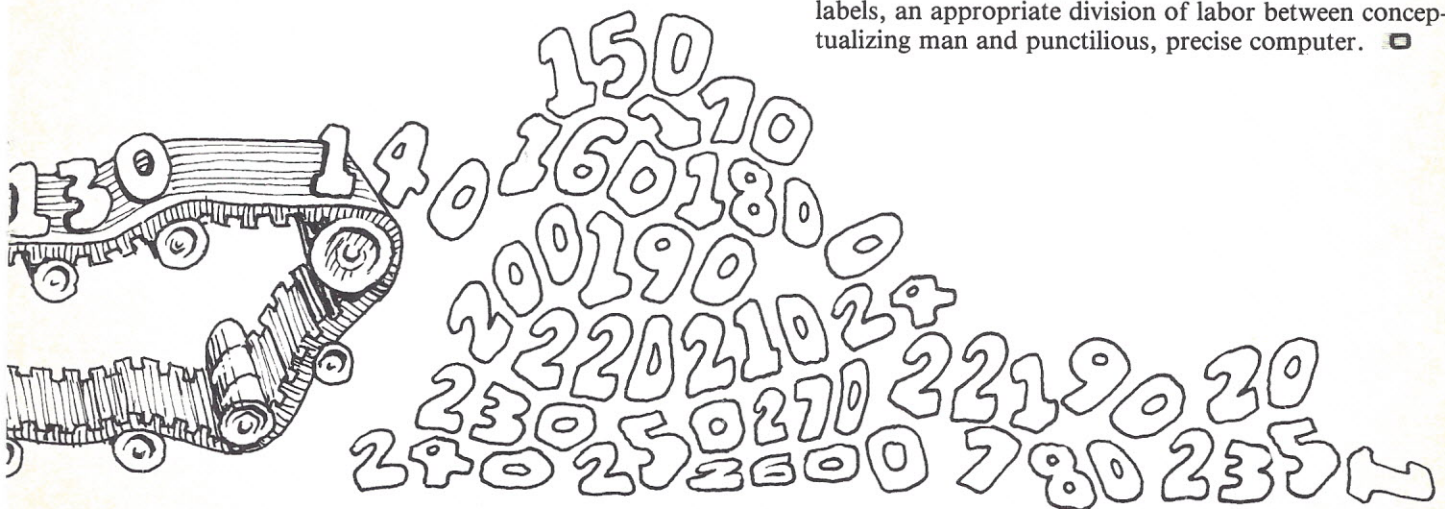
Once More, With Feeling

To recapitulate the entire procedure:

1. Draft your program as a Non-document file using WordStar's "N" option.
2. Omitting line numbers, translate your program in to precise MBASIC syntax and vocabulary. Use labels/titles in place of line number references.
3. PIP the program (or section thereof) using PIP's [N2] parameter. This installs six-digit line numbers.
4. Note which line numbers have been assigned to the subroutines and code sequences referred to internally. Use WordStar again to automatically find and replace label references with line numbers.
5. Use MBASIC's RENUM command to replace the PIP-installed line numbers.

The benefits of this procedure include access to WordStar's power and flexibility, while initially drafting and refining a program. It goes much faster than keying in by MBASIC and editing on only one line at a time. Also, you are freed from the tyranny of MBASIC's line numbers, at least while doing the actual writing. The procedure is even useful when copying big blobs of code, say from a magazine article, if you want to avoid typing the line numbers.

Of course, if you are writing a very small program you probably won't want to bother switching back and forth from WordStar to PIP to MBASIC. But for any serious work you can change from chipping away at stone to shaping and molding clay in the initial stages. Only when the form is set, do you firm it up into the rigid shape required by MBASIC. Best of all, you let the Osborne 1 handle the numbers while you deal in concepts and labels, an appropriate division of labor between conceptualizing man and punctilious, precise computer. ■



I/O, I/O, It's Off To Work We Go...

Editor's Note: This article is the first in a series on interfacing other devices with the Osborne 1 computer. This issue we'll look at serial communications, while in subsequent issues we'll examine parallel, IEEE, and software protocols.

Much of the information here is technical and may confuse the novice reader. Nonetheless, the intent here is to fully describe RS232 and its development. As you become more comfortable with computer terminology you might want to refer back to this article and increase your understanding.

On a more practical vein, each article in this series will feature an "application note" describing how to implement the theory discussed with a printer connected to the Osborne. This month's printer hookup description is for the Diablo 630, a popular letter-quality printer (see page 56).

Part One: The RS32 Interface and Serial Data Transfer

by Brad Baldwin

The need to standardize wiring and signals is similar to the need to standardize the electrical connectors, plugs, and outlets in your home. Toasters, TV sets, lamps, and fans all use the same type plug and socket. Imagine what it would be like if every home appliance manufacturer used their own plug system!

To standardize how various types of computers, modems, printers, and other business machines are connected, the Electronic Industries Association (EIA) developed an interface standard—called RS232—around which business equipment manufacturers could design their product. The current version of the popular interface—the one in your Osborne 1—is officially known as the EIA RS232C standard.

The RS232 cable and connector were designed such that one computer or business machine could attach to a completely different business machine. Before standardizing, manufacturers designed their own systems; logic levels, timing parameters, and control codes are often unique not only from one manufacturer to the next, but sometimes within the same company.

Background and History of Development

The first RS232 interface was developed in the early 1960's. Seven interchange circuits were defined and the maximum open-circuit voltage was specified as 50 volts to ground. The maximum current flow was not to exceed 1/2 amp. The OFF, or "low" condition, for a signal line was defined as less than three volts, while the active or "high" condition for a signal line was defined as greater than plus three volts. Allowing business machines and modems to be plug compatible was the intent of the standards.

The first RS232 specification did not go far enough. Therefore, RS232A was adopted as the new recommended standard in 1963. This interface established a

Figure 1

EIA RS232A, developed in 1963:

PIN	CIRCUIT	DESCRIPTION
1	AA	Protective Ground
2	BA	Transmitted Data
3	BB	Received Data
4	CA	Request-To-Send
5	CB	Clear-To-Send
6	CC	Data Set Ready
7	AB	Signal Ground
8	CF	Data Carrier Detector
(9, 10, 15, 17)		Various lines not utilized by the Osborne 1
20	CD	Data Terminal Ready
(22, 24)		Additional lines not implemented.

fixed relationship between a specific circuit and a specific pin number. It also defined signal voltage levels as -3 to -25 volts to represent the OFF state and $+3$ to $+25$ to represent the ON condition.

The accompanying chart shows what those standards were. The first RS232 standard defined just the seven top lines. RS232A not only further defined these, but also assigned pin numbers on a standard 25-pin connector. Additional circuits were defined for optional usage.

Coding: "X" stands for any alphabetic character.
 Ground lines are: A"X"
 Data lines are: B"X"
 Control lines are: C"X"
 Timing lines are: D"X"

In 1965, the RS232B standard was released. It provided for two additional specifications. The first change was that the terminating impedance at the receiving end of an interchange circuit was not to have a DC resistance of less than 3000 ohms or more than 7000 ohms. This helped engineers design interface circuits with better reliability.

The second (optional) change permits tying together frame ground and signal ground (data set). When used, a definite signal reference is established between equipment, i.e., between computer and printer.

Today's present standard RS232C was released in 1969. It further clarified circuit definitions and stated that when properly terminated, the voltage should not exceed plus or minus 25 volts and preferably would not

be greater than plus or minus 15 volts. It should be noted that the phrase "standard RS232C" is anything but! Despite the standardization, the RS232 connector has been called the most abused connector in interfacing.

The following chart shows the direction of the interface circuits. A little more background information is needed here before going further.

DTE stands for Data Terminal Equipment and DCE stands for Data Communications Equipment; the Osborne 1 is considered to be a DCE device. RS232 signals were designed with a common point of reference, which happens to be the DTE device. The transmitted data line on the Osborne 1 is actually physically receiving data; however, recall that the Osborne 1 is a DCE device and that signal definitions reference the DTE device. The Osborne 1 received data pin is actually transmitting data, because—once again—the signal definition references the DTE device. These and other signal directions are made more clear in the accompanying diagram.

The sequence of operation for transmitting data is as follows:

Signal Description	Sending Device
1) Data Terminal Ready	Printer
2) Data Set Ready	Osborne
3) Request-To-Send	Printer
4) Clear-To-Send	Osborne
5) Transmitted Data	Printer

Figure 2

Osborne 1 (DCE)		Printer (or other DTE)
Ground	1 — 1	
Transmitted Data	2 — 2	
Received Data	3 — 3	
Request To Send	4 — 4	
Clear To Send	5 — 5	
Data Set Ready	6 — 6	
Signal Ground	7 — 7	
Rec Line Signal Detect	8 — 8	
	— 11	Secondary Req to Send
	— 19	Secondary Req to Send
Data Terminal Ready	20 — 20	

Pin 11 or 19 are secondary, or reverse channel lines, which will be explained later.

The sequence of operations for receiving becomes:

- | | |
|------------------------|---------|
| 1) Data Terminal Ready | Printer |
| 2) Data Set Ready | Osborne |
| 3) Data Carrier Detect | Osborne |
| 4) Received Data | Osborne |

Now, let's try to make some sense from these strange and confusing terms and apply it to everyday use. The printer is the most commonly interfaced device using RS232, so we'll use that in our examples.

Transmitting Sequence of Events

1) The Data Terminal Ready signal is sent from the printer (or other DTE device) to the computer, indicating that the printer is powered up. In other words, the line goes high (ON or positive voltage) when power is supplied to the printer, no errors are detected, and the printer is "on line."

2) The Data Set Ready line is sent to the printer from the Osborne and indicates that it also is ON. When power is ON to the Osborne, this line is always "high". (We assume the computer is ready if it is on.)

3) The Request-To-Send signal is sent from the printer and goes high (ON) when the printer's Data Terminal Ready is ON and when the computer has responded with Data Set Ready. It indicates to the sending host (the Osborne 1) that the printer is ready to receive data.

4) Clear-To-Send is sent to the printer and indicates it is ready to transmit. This line is held continuously high when power to the Osborne 1 is ON.

5) Transmitted Data is data transmitted from an external device, such as a printer, to the Osborne 1.

Receiving Sequence of Events

1 & 2) Data Terminal Ready and Data Set Ready were already explained.

3) Received Line Signal Detector (or Data Carrier Detector) is sent to the printer, indicating that the computer is receiving a signal above a preset level. When the signal drops below this level it goes OFF and stops the flow of information to the printer. On the Osborne, this line is continuously high when the power is ON.

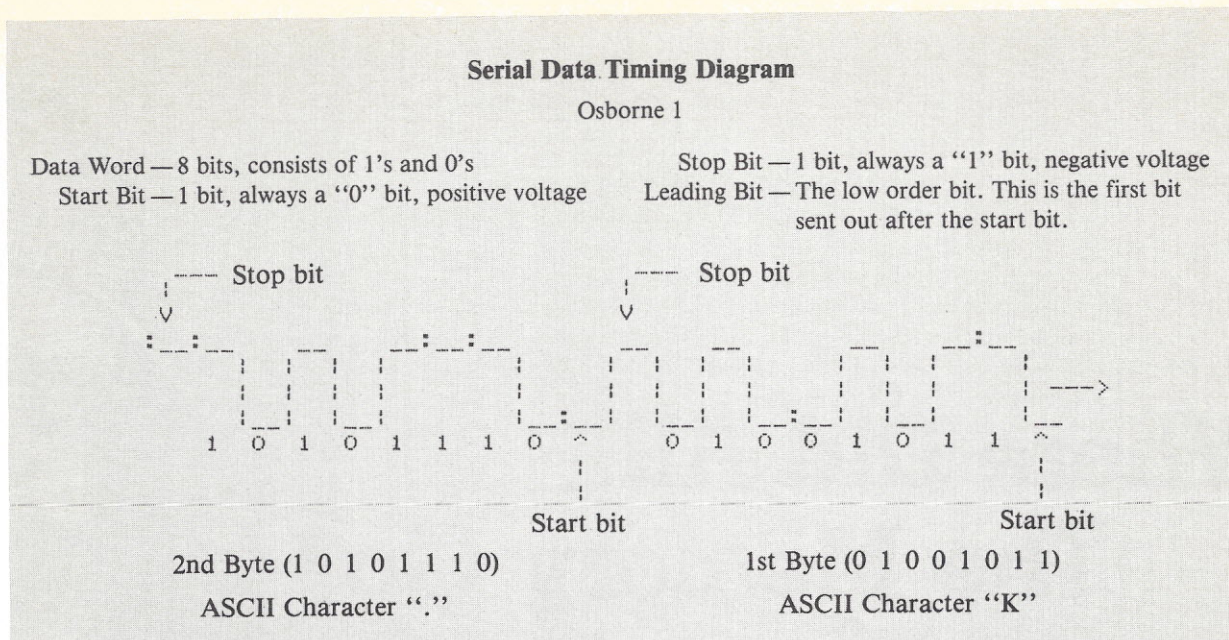
4) The Received Data signal is serial data SENT TO THE PRINTER. The computer sends data to the printer in the form of binary 1's and 0's or negative and positive voltages respectively. (More on this later.) Recall that the Osborne's "receive data" line actually sends data due to DTE referencing.

Secondary Channels

A very important optional line that should be discussed is the Reverse Channel or Secondary Request to Send line. It is also commonly referred to as the "hardware handshaking" line. This is a communication channel from the printer to the Osborne 1 and becomes active and stops the flow of data when:

- 1) The printer's buffer is about 7/8 full.
- 2) Paper is out.
- 3) Ribbon is at its end.

Figure 3



4) The cover is open.

5) Any other "check" condition.

On most printers, this line is either pin 11 or 19. As you might guess The Reverse Line is important because it keeps the printer's buffer from overflowing, and offers an alternative to specifying a particular communications protocol. These are concepts that will be dealt with more fully in following articles in this series.

Serial Data Transfer

This section devotes itself to data and data transfer.

Data in the Osborne 1 can be WordStar text, MBASIC programs, data files, or any other organized set of instructions. All data in all computers are binary values; 1's and 0's. This makes it easy for the computer to send information because the signal representing the data is either ON or OFF. If multiple states were used—such as no voltage, a little voltage, medium voltage and so on, up to full voltage—it would be possible due to power fluctuations that "medium" would become "a little" voltage. In other words, 5 volts could temporarily drop to 4 volts and therefore look like a different data character.

How, then, is RS232 data sent? Data is sent over a line one bit after another when in the serial mode. Each bit is sent at a timed rate (the baud rate) and the receiving device (another computer or a printer) examines the data line at the appropriate times to gather and assemble the data.

Data is sent from the Osborne 1 in a ten-bit string. The first bit is always a single logic "0" data bit, and is termed the "start bit." In order for the printer to receive the data bits properly, the computer and the

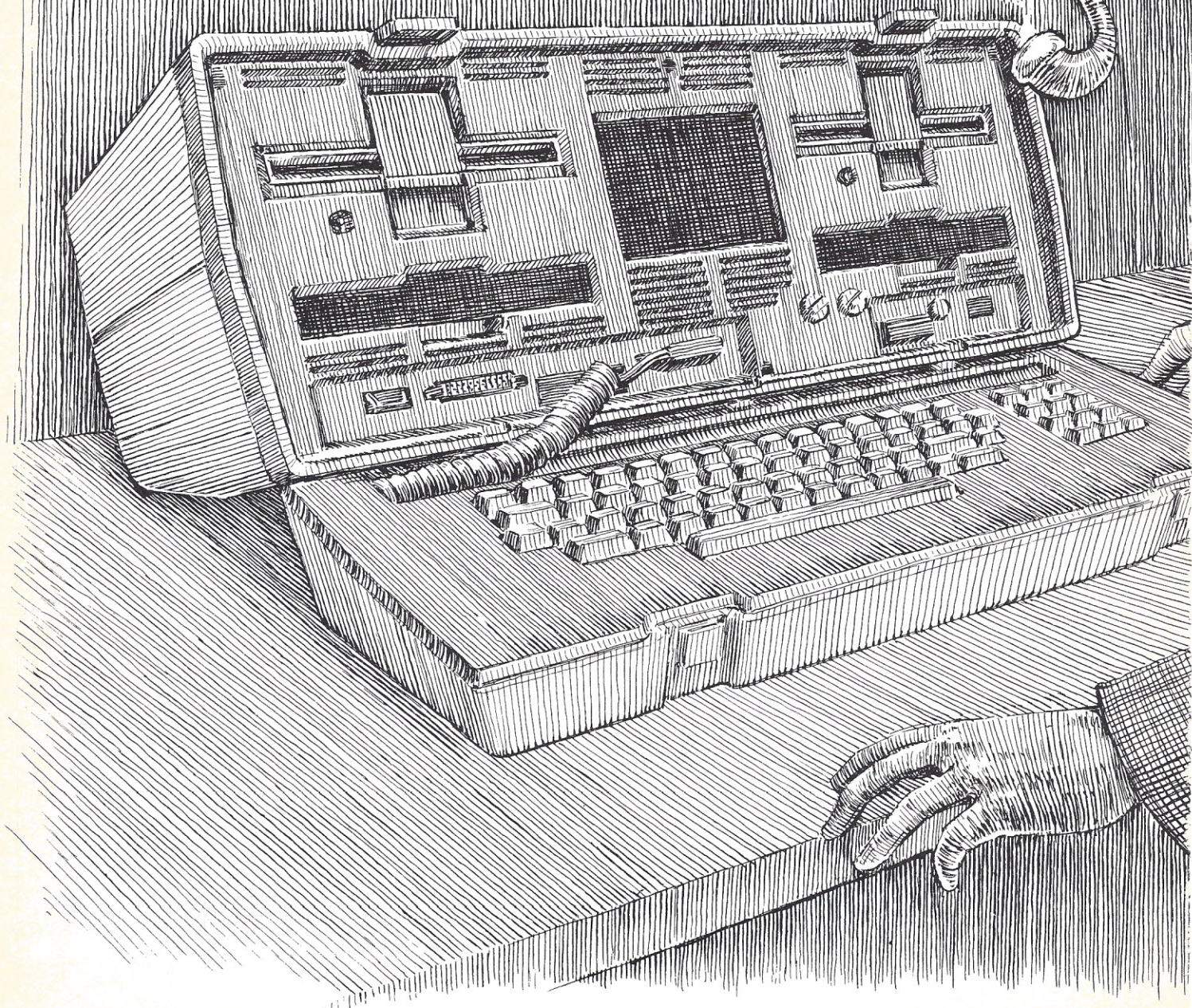
printer are both set for the same baud rate. The baud rate is how many bits are sent per second. After the printer receives the start bit, it examines the data line coming from the host at the established baud rate. As mentioned, the printer takes in the data as a binary "0" or a "1". The printer examines the data line expecting to receive eight data bits; however, bit #8, the high order bit, is usually ignored. The remaining seven data bits are assumed to be the coded ASCII character that the host wanted transmitted to the printer.

Transmissions end with a logic "1" bit called the "stop bit." The stop bit level is maintained until the next character is ready to be transmitted. Hence, the start and stop bits are used to synchronize the receiving unit (perhaps a printer) with the sending unit. When bits of a character travel in sequence as explained above, it is called "serial transmission." With the start and stop bits added, it is called asynchronous transmission because every character must be monitored, or individually synchronized.

The Osborne 1 sends out 8-bit data words with 1 start bit and 1 stop bit; therefore, the Osborne 1 uses asynchronous transmission. Synchronous transmission is more complex and requires expensive equipment, but allows more information to be transferred per second because the line is so cluttered up with start and stop bits. For example, if it took 21 seconds to send out information asynchronously, it would take 15 seconds to send it out synchronously. The main disadvantage to serial synchronous transmission is that data can be lost if the sending and receiving units become unsynched.

Next issue we'll examine parallel data transmission. □

Where Did All The Memory Go?





by Jim Jett

I recently bought my Osborne 1 to do word-processing. My first project was to rewrite a 100,000 word fiction manuscript. I made assumptions about the disk storage capacity that led me astray and eventually to a full-scale investigation.

The long-established way of word-counting for manuscripts has been to assume five letters to each word and 250 words to each page. I had often read that one byte was enough for one character and that a 102K disk would store about thirty single-spaced pages of text. This sounded as if I could save my manuscript on seven disks with lots of room to spare. NOT SO, OF COURSE.

BAUMGARDNER

The rest of this article chronicles some experiments that led to some conclusions. I will present two of the conclusions now:

1. Somewhere between Hayward and my home in Dana Point, California, a Pac-Man clone sneaked into my Osborne. He, or she, is probably hiding in the "boot." Each time I save a file the clone zips into the drive and eats up memory space.
2. I am about to look up in supplication to the Great Computer Engineer in the Sky and ask that He lower down a 10M hard-disk drive—or at the very least that He help Adam O. get the Double Density upgrade on the market.

Now to the experiments. . . The Osborne Manual told me that the 102K the retail store advertised was really 92K of formatted data storage space. I loaded WordStar and inserted a freshly-formatted diskette in Drive B. Before I logged to that drive, I queried Disk A with an R and then **XDIRRETURN**. The space left was 2K. Hastily I pushed any key followed by L and then **B:RETURN**. I queried the disk. It said that 2K had been used and 90K were left. I had lost 2K without saving a single word. Space of 90K seemed like a lot. The 2K blocks worried me.

I pushed any key again and then D, then named my new file HUHQUERY (? is illegal in a filename). The text of my file was:

*You'll wonder where the memory went,
When you save your file with good intent.*

XDIR said I had used 2K and had 88K left. I resaved my file to create HUHQUERY.BAK. That used another 2K. Using Y I deleted both files.

To prove my suspicion by using *reductio ad absurdum* that no file could ever use less than 2K, I saved a series of files named ALPHABET.001, ALHABET.002, ALPHABET.003, and so on.

The texts of these files were single letters, in alphabetical order. I did not, of course, make and save 52 files for both upper and lower case. That would be silly. The diskette only holds 26 upper case letters and 19 lower case letters for a total of 45 (letters and files)!

Next I tried one manuscript page with default settings, except for double-spacing. It used 2K to store 250 words.

The same file single-spaced used 4K! This was before I suspected the existence of the clone.

A file with a little less than four pages with default settings except for .PL51(not 66) used 4K. Another files with the same format but slightly over three pages used another 4K. Checking to see that neither drive was active, I removed the diskettes and turned the Osborne 1 off. I drove to the retail store and bought another ten diskettes. I could forsee having to buy 100 at a time.

Upon return and after firing up in the proper sequence I decided to stretch WordStar to its limits by employing *expandio ad absurdum*. Top and bottom margins were zero (MT0 and MB0). Left and right margins were 1 and 79 (^OL1 and ^OR79). Page length was set at 66. Then I held the Z key down for a long time. It made me a little sleepy (file name ZZZ). When the screen was full of Zs (about 5280 of them), this one page, with no paragraphs, punctuation, spaces, etc., used 6K of storage. I suspect the unused portion of the 3rd 2K block still had room for another 864 Zs.

At one extreme were 45 files each with one letter. At

the other was potential for storing maybe 92,160 Zs. Neither were of any use. We all know the alphabet and who wants that many Zs.

Something was gobbling up spaces, and probably carriage returns. *The Clone!* I had smoked him out in file ZZZ by space-starving him. He must have ran back to ROM, of course. It was considerate of him to spare the letters, numbers, and punctuation.

The preceding is a trifle tongue-in-cheek. I did go on to find that with ordinary text at default settings, one 2K block holds 34.25 lines and my available 90K of space could store 28.02272727 pages. No blank spaces, no long top or bottom margins, no .BAK files. . . You could probably get 20 useful pages on a diskette.

Real engineers design and build to "worst case" specifications. Advertising "engineers" try to sell with "best case" claims—plus 5 to 10%!

Buy a car with an advertised 250 horsepower engine. Balance, port, polish, and fine-tune it on a dynamometer. You will be lucky to get an honest 185 b.h.p. The advertising "engineer" isn't really lying. He's talking about a horse of another power.

My letter-quality printer was advertised as a "200 word per minute" machine. The manual said: Print speed 16 characters per second (Shannon text, pica pitch). That is 960 makers and spaces per minute. Two hundred useful words? NO WAY. It won't do even 192.

You, nor I, nor anyone else will ever get 30 pages of useful text on one 5¼ inch single density disk. You might spend some time trying to approach that ideal. I am. . .

Mr. Jett's calculations regarding the storage capacity of a single density Osborne 1 are correct. Because of the way in which CP/M works, the minimum amount of space that can be allocated to a file is 2K. This means that the maximum number of files on an Osborne single density diskette is 45. I'm not sure what Mr. Jett's typical document looked like, but ours resulted in getting 30 pages onto one diskette; his calculation of 28.02272727 is close enough for me. Realistically, you should never attempt to store a document longer than half the capacity of the diskette, resulting in a practical upper limit of 15 single-spaced pages.

The discrepancies Mr. Jett points out regarding spaces taking up more space than they deserve are due to the justification that WordStar normally performs on documents.

Double density owners will find the numbers listed quite different. We've changed the minimum size of a file to 1K, meaning more files can be stored on a diskette. The upper limit for a single file is closer to 30 pages of text.

As for printers, Diablo says my 630 printer runs at 45 characters per second. Guess what? It does; in fact, in one test I made (using a lot of tabs), it ran 53. On the other hand, another printer I own claimed it ran at 160 cps. Guess what? It ran only 55—I guess it didn't want to break the speed limit.

The point of Mr. Jett's article and my elaboration on it is simple: advertising claims notwithstanding, it pays to carefully examine and understand the parameters you are working with. Every piece of computer equipment has its limits, and I hope this article helps you understand those of the Osborne—th

Two-and-a-half Utilities for dBASE II

by Willis Grant

(Editor's note: starting next issue we'll feature a regular column for dBASE II users, called dBASICS. Since so many of you Osborne 1 owners are discovering the power of dBASE, we're offering these two small morsels to whet your appetite prior to our column's appearance.)

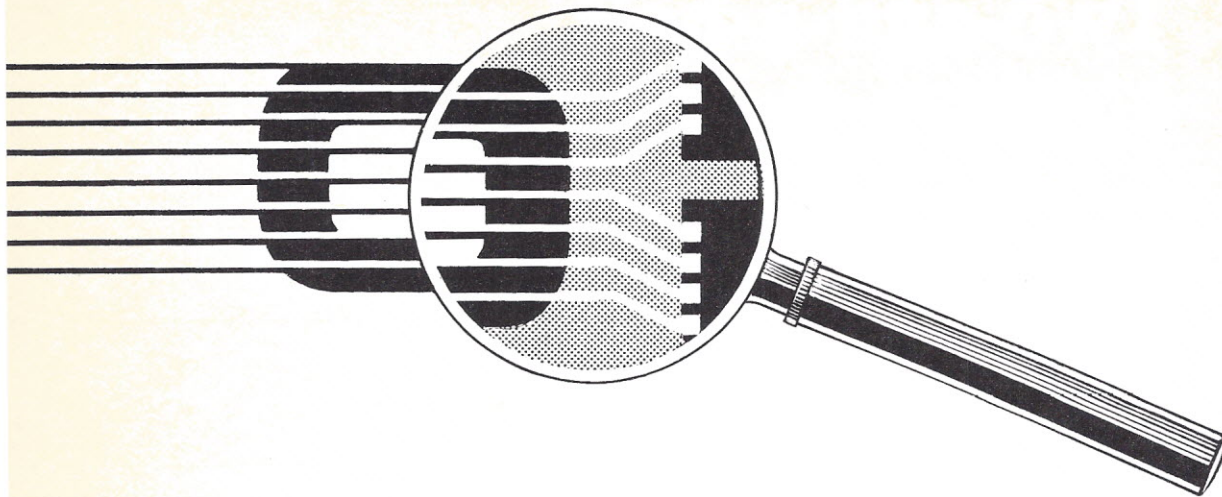
The following two dBASE II program examples allow you to get into dBASE II quickly, the second one without having to type a date. The first uses a default date saved in a file named DAT.DBF (this file has one entry in one field defined as: DA,C,8). The second method allows you to skip entering a date entirely. Either program is invoked by typing DO IT.

```
*IT  SETS UP dBASE FOR B: DISK OPERATION
SET TALK OFF
ERASE
USE DAT
STORE DA TO DAX
@ 5,5 SAY 'ENTER DATE IN FORM OF MM/DD/YY'  'GET DAX PICTURE 'XX/XX/XX'
READ
SET DATE TO &DAX
REPL DA WITH DAX
USE
SET DEFAULT TO B
@ 10,5 SAY 'DEFAULT SET TO B ... GO TO IT'
SET TALK ON
@ 12,0
```

```
*IT  SETS UP dBASE FOR B DISK OPERATION, NO DATE ENTRY
SET TALK OFF
ERASE
USE DAT
STORE DA TO DA
SET DATE TO &DA
USE
@ 8,5 SAY 'DATE IS SET TO 'GET DA
SET DEFAULT TO B
@ 10,5 SAY 'DEFAULT SET TO B ... GOT TO IT'
SET TALK ON
@ 12,0
```

The following program protects you from destroying data when modifying .DBF file structures. To use it, type DO A:SWITCH.

```
*SWITCH
ERASE
@ 4,0
? 'THIS PROGRAM MODIFIES STRUCTURE OF A DBF FILE'
? 'AND RESTORES DATA.'
?
ACCEPT 'DBF FILE TO BE CHANGED? 'TO OBJ
USE &OBJ
COPY TO &OBJ.Z
MODI STRU
APPEND FROM &OBJ.Z
USE
USE &OBJ
ERASE
@ 10,0 SAY 'MODIFICATION COMPLETED. YOU ARE NOW USING &OBJ'
? 'YOUR ORIGINAL FILE AND STRUCTURE IS SAVED AS &OBJ.Z'
```

We're Teaching the World to use Microcomputers

by Daniel D. Montague, Jr.

While reading the March '81 issue of "Microcomputing Magazine" I noticed an advertisement for the Osborne 1 computer. At the time, I was just completing assembly of my Heath/Zenith 89 and becoming more deeply involved in using a microcomputer for small business applications, as a hobbyist, and for educational purposes. Once I completed my H/Z 89 and began to use it for accounting, billing, and inventory control in my exterminating business, I gradually developed a fascination with small computers.

My curiosity peaked after seeing the Osborne 1 displayed at The Xerox Store in Fort Lauderdale, FL, during their grand opening in August. Realizing the Osborne is an exceptionally good value for the price, I decided to purchase one—planning to use it for business and pleasure, as well as thinking it would make a valuable contribution to my daughter's education. I especially liked the portability factor since I could easily carry the Osborne around with me as I traveled about checking job sites.

I began to envision the many uses I could find for it

from scheduling appointments and developing mailing lists, to keeping track of chemicals used in my business. I became intrigued with sending and receiving messages electronically, getting the latest stock quotes and checking airline schedules via "The Source." It didn't take long before I was the envy of my friends and business associates, many of whom were also looking at ways to use microcomputers to streamline and economize their own businesses.

After owning the Osborne for several months, I offered to help my children's school with a fund-raising effort that had been undertaken. Although the school's staff was immensely pleased that they could take advantage of word processing with the Osborne, it quickly became evident that they found the sophistication inherent in WordStar to be a limitation to their usage.

Finding that I was spending more and more time dropping by to give instructions on various tasks such as setting up form letters, merging names and addresses, creating files and making revisions to text, I decided that an easier method for people working on the project to

We began kicking ideas around and it became more and more apparent that the taped instructions had a lot of merit—with huge potential for financial success!

was to listen to a set of step-by-step instructions that I recorded out of desperation.

No longer was it necessary for me to stop by the school daily to check their progress or receive innumerable telephone calls from project workers to answer inane questions, many of which had been answered several times before.

During one of my routine visits to The Xerox Store around the Christmas holidays, I discussed my idea of the taped instructions with a saleswoman, Nancy Riley. She very quickly saw the marketing potential in terms of helping customers who require a "quick start" after purchasing a computer system. In addition, she recognized an entirely different application—one which would benefit sales representatives by assisting them in rapidly learning something about the many different hardware systems and software programs they need to become familiar with in the everchanging marketplace. In short, Nancy saw the training tapes' benefit to salespeople as well as customers as a way to make their respective tasks easier.

We began kicking ideas around and it became more and more apparent that the taped instructions had a lot of merit—with huge potential for financial success! While I opened an office in my garage, Nancy and I worked together through her connections with various top level executives at Xerox Corporation's headquarters in Stamford, Connecticut, and with personnel in their offices located in California and Virginia.

Sample tapes we developed were reviewed and evaluated as items to be sold at The Xerox Stores nationwide and utilized by store representatives for their own training. In March we moved into our present suite of offices, redesigned our packaging and sales literature, began a vigorous advertising campaign, and revamped our pricing structure. We created a unique identity very quickly by using the "MICRO" colors of process blue and yellow, which ties together all of our product literature, packaging, national advertising, and dealer packs. Even our office stationary matches. Everyone, including the postman, has commented on the "distinctive look" we achieved and the image we created.

Xerox' opinion of the tapes was such that they placed a large order for our Xerox 820 and Osborne 1 series a short time later. As a means of preempting competition, we purchased several other computers including Apple II+, Xerox 820, IBM PC and Atari. Using the same theme, we developed audio instructional cassettes for the operating systems of these other computers in addition to producing learning programs for some of the best selling software on the market... programs like MicroPro's WordStar, CalcStar and SuperSort; Sorcim's SuperCalc; Ashton Tate's dBase II; and VisiCorp's VisiCalc. Additionally, we developed instructional tapes for other popular software programs which are widely used in business today.

Nancy ultimately assumed the presidency of MICRO Instructional, Inc. We have subsequently grown to an organization of eight fulltime sales, administrative, and technical employees, with several part-timers in less than six months. Lenny Bayer, another former Xerox sales representative recently joined us as director of operations. "I stay in my back office and generate products and ideas," says Montague. Nancy deals with vendors, customers, retailers and distributors who have learned that giving her a price only means they have something to sell. "She has become so adept at handling the purse strings," states Montague dryly, "that on one occasion I added several boxes of #2 pencils to a supply order and the clerk called her back for approval."

Our company, Micro Instructional, Inc., advertises nationally in half a dozen or so top-flight computer publications and is projecting sales of \$1.5 million by the end of our first fiscal year 1983. We firmly believe we will be established as a multimillion dollar corporation in less than two years based on our rapid growth to date in the exciting and explosive field of microcomputers.

In summary, the point of my story is to encourage people who have an interest in learning about microcomputers or acquiring one for business or home use to do so—they'll never know where it can lead them until they try! We took a "simple idea" and now regularly work 12-16 hour days trying to keep up with the demand for our products!



Random Tracks

WordStar With the Centronics 739

by David Price

Though the Centronics 739 printer seems to live in the shadow of the ubiquitous Epson, its proportional mode gives characters that are only a notch below typewriter quality. WordStar users can take advantage of this feature quite easily. The required patches are listed below.

BLDSTR: 01	ROLDOW: 02 1B 1C
PBACKS: 02 08 0C	PSINIT: 03 1B 11 0D
PALT: 02 1B 0E	USR1: 01 0E
PSTD: 02 1B 0F	USR2: 01 0F
ROLUP: 02 1B 1E	

Appendix 1 of the Osborne reference guide discusses the procedure for making WordStar patches with INSTALL. When you run INSTALL, you will be asked to specify the type of printer you are using. For the Centronics, reply with option C—a Teletype-like printer that can backspace.

Owing to some quirks of the Centronics, a few words of explanation are in order. BLDSTR is set to 1 so that text marked for boldface will not be overprinted. Since each character has a different size in proportional mode, backspacing does not register the printhead with the previous character. For that reason, overprinting usually creates a blur. PALT and PSTD are redefined so that WordStar's pitch controls can be used to switch between normal print and elongated print. ROLUP and ROLDOW are redefined to allow superscripts and subscripts, PSINIT contains the character sequence that initializes the Centronics for proportional printing. USR1 and USR2 define two of WordStar's printer controls to take advantage of the 739's "fast underline" feature. When fast underlining is enabled, the Centronics prints an underline on the fly, with no need for backspacing.

After these patches are made, the following printer control functions are operative:

- ~ PA—begin elongated print
- ~ PN—end elongated print
- ~ PT—superscript begin/end
- ~ PV—subscript begin/end
- ~ PW—begin fast underline
- ~ PQ—end fast underline
- ~ PS—standard underline begin/end

Since I like to see all of my text onscreen, I keep my display margin set at 52. The line-forming facility of MailMerge then lets me expand the margins at print time. I keep a pair of files on my WordStar disk to save the trouble of retyping dot commands. One of the files contains dot commands for a manuscript with page numbers. The other contains dot commands for a letter. As you can see from the listing, I have chosen to put about 90 proportional characters on each line.

To print a document, I use the merge-print command and supply the name of the appropriate command file. Both files include dot commands that request the name of a text file and then retrieve the file from Drive B. With all those dot commands encapsulated in a separate file, I can devote my precious user-defined keys to other purposes.

Osborne SuperCalc User Report

(Editor's note: We recently received the following notice from Sorcim, the creators of SuperCalc.)

Dear Sirs:

The problem with totals of numbers not equaling the total of the displayed numbers is a display problem. The problem behaves like this:

Say that you have a row of numbers. Some of these numbers were arrived at by calculations; particularly dividing or multiplying by a fraction (ex: 0.0075). This results in a number with more than two significant decimal places (1.656). If the column or range of cells is formatted to display as Integer or \$ (dollar) format then the display only is rounded to the fixed number of decimal places.

Example:

Display	Actual Valued Stored
---------	-------------------------

1.66	1.656
------	-------

As can be seen, when adding the stored value to another similar value, the result may not equal the total of displayed values.

The way to avoid this is to place a formula in the cells that generate the extra precision (as with a divide) to force the actual value to be rounded to 2 places (\$ format).

Example:

- A1/A2 produces more precision than 2 digits.

- Enter in the cell instead of A1/A2 the following:

$\text{INT}((A1/A2)*10 - 0 + .5)/100$

Any formula could be placed in the innermost pair of parenthesis where the A1/A2 is located.

The best way to proceed, when making the template (blank worksheet), is to set the format to G for General so that you can see all the places where the extended precision is generated. Then place the rounding formula into these cells with the formula already there. When you are satisfied that you have gotten all the places where the extended precision is generated, set the format to dollar (\$) format or leave it General, if you like.

Chris Illes
Sorcim
Customer Support



Transferring Files Between Osbornes

This is a brief description on how to transfer non-COM type files between two Osborne computers using the PIP command instead of communications software.

A null modem cable is connected between the two Osbornes. For those who don't know what a null modem cable looks like, here is how to make one:

RS232	RS232
<u>CONNECTOR 1</u>	<u>CONNECTOR 2</u>

pin 1	-----	pin 1
2	-----	3
3	-----	2
7	-----	7

Use the STAT and PIP commands to transfer your files. Only text files can be transferred, as the high-order bit (8th bit) is stripped (removed) from all files during the PIPing process. Step 1 is to type the following on the SENDING Osborne:

A STAT PUN:=PTP: RETURN

Step 2 is to type the following on the RECEIVING Osborne:

A STAT RDR:=PTR: RETURN

You're now ready to PIP the files. The receiving Osborne enters its PIP command first:

A PIP d:filename.typ=RDR:[E] RETURN

This sets the computer up to receive information without loss from the sending unit; the [E] tells PIP to echo all transfers to the screen so you can see what is going on.

Now type the following on the sending Osborne:

A PIP PUN:=d:filename.typ[E] RETURN

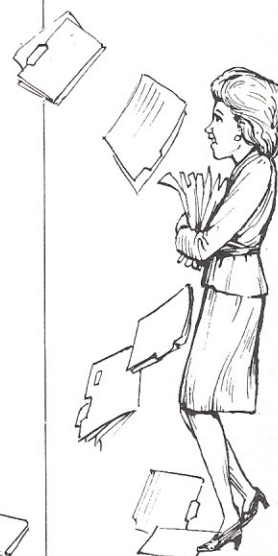
In the above examples, "d:filename.typ" should be substituted with the drive, file name, and file type you wish to transfer.

OCC Technical Support Staff



Forgot To Log Drive B

One human error that's always happening around here is the one where you forget to log onto drive B and inadvertently create a file on the WordStar diskette in Drive A. Besides XDIR, this is the quickest way to find out how little room is left on the WordStar diskette. If you happen to perform this misdeed do not panic, just block the file and write it over to Drive B. In other words, place the cursor at the beginning of the file and type >KB, next move the cursor to the end of the file with >QC and type >KK to block the contents of the file. To transfer the file, type >KW and supply the desired file name prefaced by B: and press RETURN. Abandon editing of the file you opened on Drive B to see that your file is in the directory of drive B.



Connecting the Diablo 630 Printer

by Brad Baldwin

The Diablo 630 received more interfacing questions than any other printer. This article suggests two ways to run that printer; however, the Diablo owner should realize that there may be other possibilities in interfacing this popular printer to the Osborne.

In any printer installation, the major questions usually focus on the following concerns:

- 1) What protocol is specified?
- 2) Under WordStar, how is INSTALL used?
- 3) How are the DIP switches set?
- 4) What is the cable configuration?

To make matters difficult, most Diablo 630s have a component called the HPRO5 board. This board contains two ROMs, which, if not already missing, should be removed. They provide proportional spacing, auto justification, auto underlining, and other intelligent features that interferes with the already intelligent WordStar. Diablo engineers are aware of the problem between WordStar and their ROMs and are presently seeking a fix. The user or dealer may remove those ROMs without worry of voiding the warranty. The two ROMs are in board locations F23 and F32.

The HPRO5 board also contains a jumper block that enables automatic hardware "handshaking" (Data Terminal Ready ties in with Printer Ready). This jumper is performed across pins 5 & 6 on the A60 connector on the HPRO5 board.

There are at least two options in running the Diablo 630. Option 1 uses hardware handshaking and the serial SETUP configuration, the other uses XON/XOFF protocol. This article contains instructions on both of those options. Use it as a reference point for other applications; then you will have at least two known ways of running the printer to fall back on.

Option 2 allows super- and subscripting, and micro justification (not to be confused with proportional spacing) to be performed.

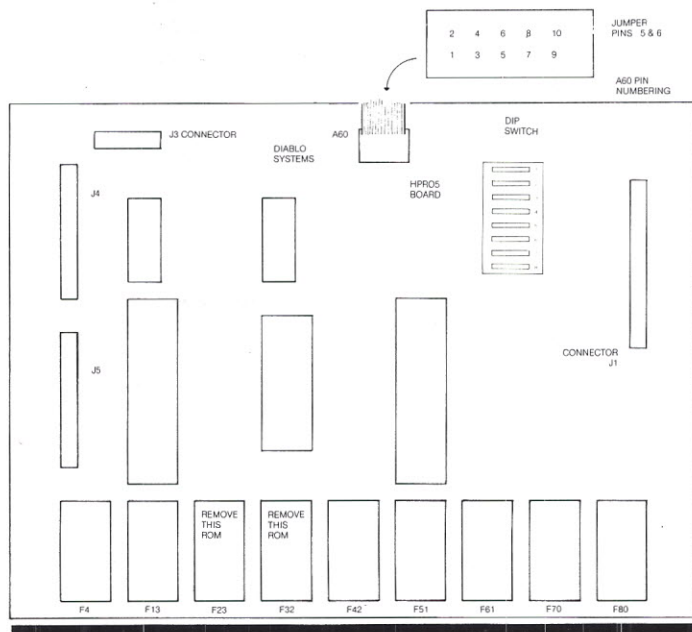
Osborne	OPTION 1	OPTION 2
SETUP Utility		
Baud Rate	1200	1200
Protocol	Serial	XON/XOFF
WS INSTALL	no changes	Diablo 1640, 1650
ROM Rev	1.2, 1.3	1.2 with Bios Patch, 1.3

The ROM Rev# refers to the Osborne 1 monitor ROM Revised Level number. 1.2 Rev machines need a BIOS patch (available from the dealer) in order to utilize XON/X-OFF or ETX/ACK protocol.

The internal A60 jumper on the Diablo enables the Data Terminal Ready interface line to duplicate the Printer Ready interface signal, creating the necessary handshaking protocol. In either case, the RS232 cable used is "off the shelf" standard:

Osborne	1	2	3	4	5	6	7	8	20
	:	:	:	:	:	:	:	:	:
Diablo	1	2	3	4	5	6	7	8	20

Pin 7 should serve as the signal ground return (the bare wire) for use in shielded cables.



DIABLO 630/HPRO5 BOARD
MAJOR COMPONENT LANDMARKS

Operator Control Panel DIP Switches			
Left-Hand DIP Switch		Right-Hand DIP Switch	
1	OFF (Double L.F.)	1	OFF (Half-Duplex ASCII)
2	OFF N/A	2	OFF (Parity)
3	OFF (Auto L.F.)	3	OFF (3 & 5 enable)
4	OFF N/A	4	OFF 1200 Baud)
5	OFF (Uppercase)	5	ON
6	OFF N/A	6	OFF (Even/Odd Parity)
7	OFF (Message)	7	OFF (Paper Out)
8	OFF N/A	8	OFF (N/A)
HPRO5 Dip Switch			
All ON except 7 & 8.			

Some of the above settings are not the only possible choice; your particular application may require something different. Other switches, while listed as ON or OFF, may be totally irrelevant to the operation of the printer.

Performing the Modifications

Use the Osborne configuration program called SETUP to configure your diskette for the necessary baud rate (1200) and printer protocol (serial or XON/XOFF). Your Osborne User's Reference Guide has information on how to use SETUP in sections titled "Setting Up" and "Modifying WordStar on the Osborne 1."

WordStar's INSTALL program is used to configure WordStar if you plan on using Option 2. The "Modifying WordStar" article in the User's Manual also contains information on how to use INSTALL. The Diablo 1640/1650 option is item "E" on INSTALL's printer menu, and should be used by Diablo 630 owners.

That's all there is to it!



A Primer on Hex and ASCII

Computer Terminology Explained

by Tom Vyse

Inside a computer every piece of information is stored as numbers. Sometimes these numbers represent instructions to the computer. Sometimes they represent letters, characters, or "control" codes, like ESCAPE or Control C.

Frequently the numbers that represent instructions are unique to a specific "processor." These are not at all standardized. Fortunately the situation involving letters, characters, and control codes is more evolved. These are the means that one computer has to talk to another, and, to a large degree, these have been standardized.

The standard which is almost universally used for one-to-one correspondence between characters and numbers inside a microcomputer is called the "ASCII" standard. ASCII stands for "American Standard Code for Information Interchange." There are other standards, including one for IBM machines which is called EBCDIC, and one for teletype communications which is called BAUDOT. The only one of interest to Osborne users is ASCII. The numbers that represent characters are usually represented in either decimal or hexadecimal ("hex") notation.

What is "hex" notation?

Anthropologists tell us that the reason we have a

decimal number system (based on the number ten) is that we have ten fingers. This makes counting by tens pretty natural. If humanity had evolved with sixteen fingers, we would probably prefer to count in hexadecimal, which is based on the number sixteen.

Since we did not receive 16 fingers at birth, we have had to invent ways to make counting in hexadecimal convenient. The method that computers use is to represent the numbers greater than 9 with the letters A through F. That means that in decimal we have the digits:

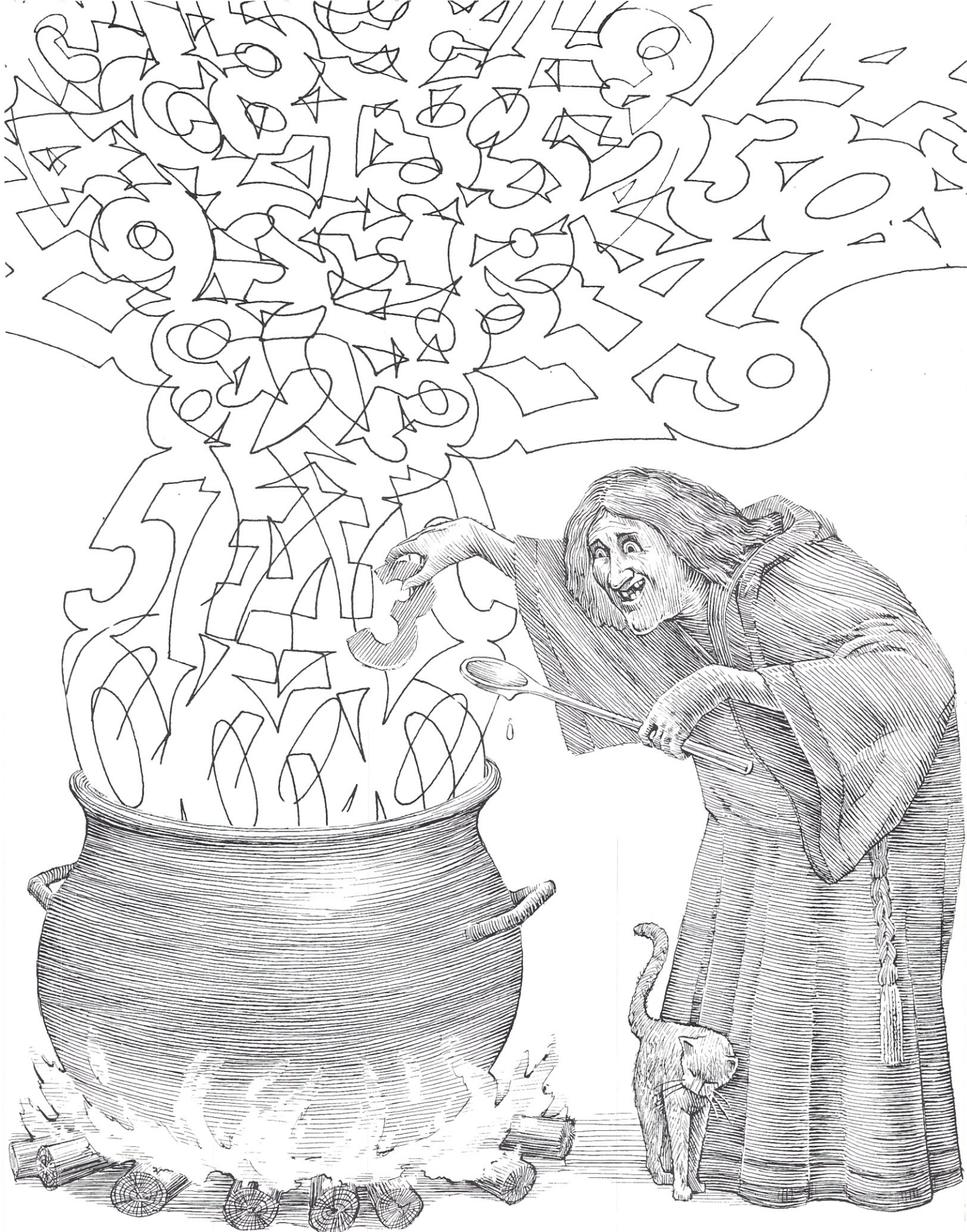
0 1 2 3 4 5 6 7 8 9

While in hexadecimal we have the digits:

0 1 2 3 4 5 6 7 8 9 A B C D E F

Does counting using these digits seem strange or difficult to you? Imagine how difficult it would be for some poor fellow who only had eight fingers to learn to count using a number system with ten digits in it (No fair to get him to count on his feet, as he also has only eight toes). He'd much rather learn to count in octal (base eight).

If you want to feel natural counting in hex, just glue



NOTE: The short, capitalized references in the ASCII column are the standard abbreviations for a performed function (FF stands for FORM FEED, LF for Line Feed, ESC for Escape, and so on).

Decimal Hexadecimal ASCII

0	00	NUL	64	40	@
1	01	SOH	65	41	A
2	02	STX	66	42	B
3	03	ETX	67	43	C
4	04	EOT	68	44	D
5	05	ENQ	69	45	E
6	06	ACU	70	46	F
7	07	BEL	71	47	G
8	08	ES	72	48	H
9	09	HT	73	49	I
10	0A	LF	74	4A	J
11	0B	VT	75	4B	K
12	0C	FF	76	4C	L
13	0D	CR	77	4D	M
14	0E	SO	78	4E	N
15	0F	SI	79	4F	O
16	10	DLE	80	50	P
17	11	DC1	81	51	Q
18	12	DC2	82	52	R
19	13	DC3	83	53	S
20	14	DC4	84	54	T
21	15	ACK	85	55	U
22	16	SYU	86	56	V
23	17	ETB	87	57	W
24	18	CAN	88	58	X
25	19	EM	89	59	Y
26	1A	SUB	90	5A	Z
27	1B	ESC	91	5B	[
28	1C	FS	92	5C	\
29	1D	GS	93	5D]
30	1E	RS	94	5E	^
31	1F	VS	95	5F	_
32	20	SPACE	96	60	REVERSE APOSTROPHE
33	21	!	97	61	a
34	22	"	98	62	b
35	23	#	99	63	c
36	24	\$	100	64	d
37	25	%	101	65	e
38	26	&	102	66	f
39	27	'	103	67	g
40	28	(104	68	h
41	29)	105	69	i
42	2A	*	106	6A	j
43	2B	+	107	6B	k
44	2C	,	108	6C	l
45	2D	-	109	6D	m
46	2E	.	110	6E	n
47	2F	/	111	6F	o
48	30	0	112	70	p
49	31	1	113	71	q
50	32	2	114	72	r
51	33	3	115	73	s
52	34	4	116	74	t
53	35	5	117	75	u
54	36	6	118	76	v
55	37	7	119	77	w
56	38	8	120	78	x
57	39	9	121	79	y
58	3A	:	122	7A	z
59	3B	;	123	7B	[
60	3C	<	124	7C]
61	3D	=	125	7D	^
62	3E	>	126	7E	_
63	3F	?	127	7F	DEL

three extra fingers onto each hand.

Why do computers use hexadecimal?

Deep down inside the electronics of a computer its fundamental capability of counting and remembering is in "binary," based on the number 2. That's because it has circuits for counting and remembering that can only be either OFF or ON, with the only legal digits being 0 and 1. Each one of these ON or OFF digits is called a "bit." For example, the binary representation of our number 2,000 is 11111010000. For convenience these bits can be put together in larger and larger groups and then given a single representation. A look at these groupings is like a visit to a computer deli at lunch time:

Two bits together can count from 0 to 3.

Three bits together can count from 0 to 7. This is the basis for the octal numbering system.

Four bits together can count from 0 to 15. This combination is called a "nybble" (or sometimes *nibble* —th). This is the basis of the hexadecimal numbering system. These can be represented with one hex digit.

Eight bits together can count from 0 to 255. This combination is called a "byte." These numbers can be represented by using two hex digits together! This is the grouping that is most commonly used for ASCII notation.

Sixteen bits together can count from 0 to 65535. In microcomputers this is usually called a "word." It is usually represented by four hex digits together and is most frequently used for memory addresses.

Bit, nybble, byte; almost makes you hungry. To get back to the questions, the reason you would want to use hex notation if you were a computer is because your basic counting and numbering ability is in binary and grouping these digits together into hex is a lot like grouping fingers into sets of five; it makes the job of talking to a human a lot easier.

There is a table for the ASCII standard in the back of many computer books and program manuals. Also there is a chart in the back of the Osborne manual called "ASCII Character codes in ascending order." To assure that you understand the relationship between the notation schemes we have presented, we've included an ASCII chart above.



CROSSTALK

CROSSTALK opens lines of communication with almost any computer modem combination and can save you time and money:

- ☐ **Easy to learn...simple to use**
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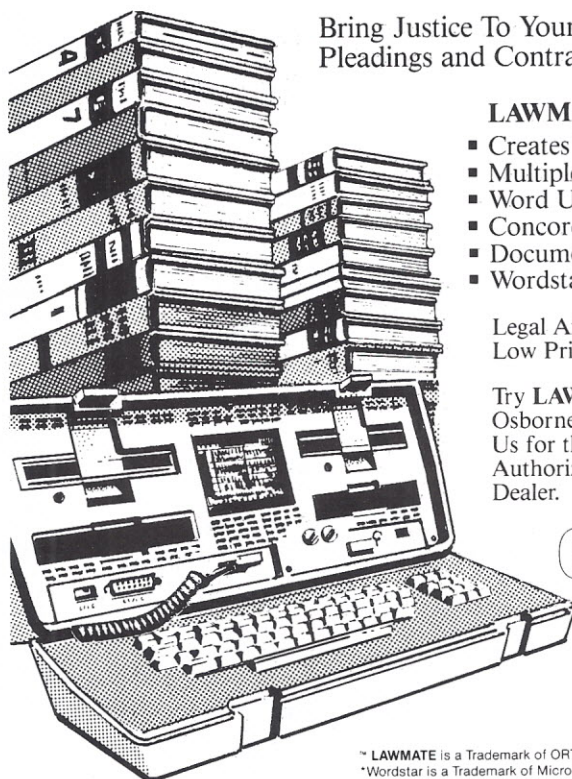
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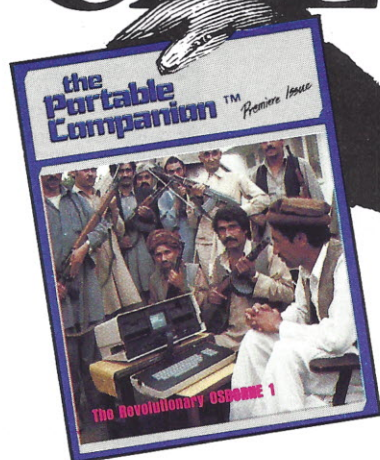
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Report header length	254 max
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Expressions in sum command	5 max

System Requirements

NOTE: The Osborne-supplied version of dBASE II is correctly configured for use only on the OSBORNE 1 computer.

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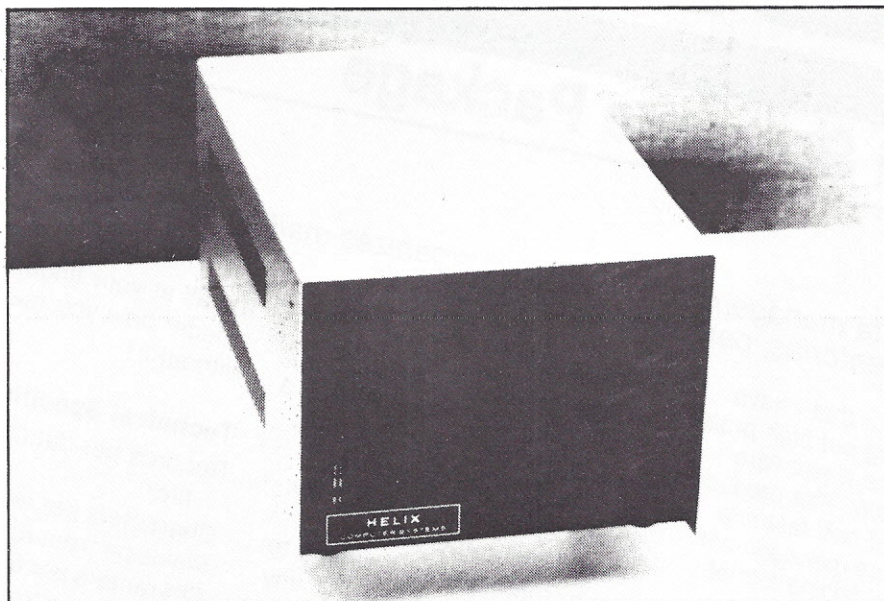
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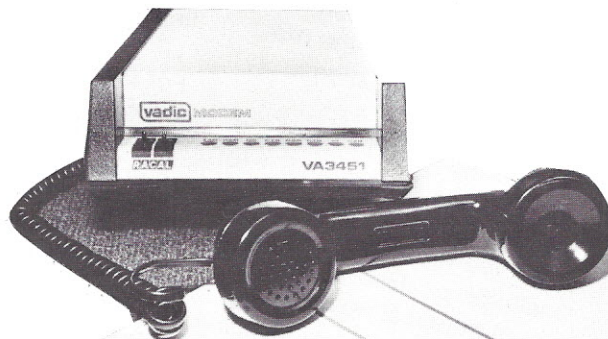
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SNAKE RACE allows up to nine players to race slithery snakes at five skill levels. The action never stops, as more and more obstacles appear in your pathway to be avoided. Most of 'em just slow you down or give your tummy a friction burn, but look out for the exploding mines!

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Furiously as you navigate the maze, gobbling up crumbs as you dodge the five vicious beasties close on your tail. Quickly you duck out the left side, dodge back on the right, and make a run for the big **ENERGY DOT** in the corner. Once you make it you'll be safe for a moment. You'll even get a chance to revenge yourself by gobbling up the monsters—if you can catch them!

This terrific assembly-language program is a lookalike for the tremendously popular video arcade game with a similar name. You'll be amazed at the number of hours you can waste trying to master these monsters! Use the arrow keys to change direction, and listen closely for the three warning beeps that tell you when the frightened monsters are about to turn frightening again...

All in all, this program is rated A+ for action, graphics, excitement, and just plain enjoyability.

PUBLIC DOMAIN PACKAGE

This package contains ten diskette sides absolutely packed with great programs! Many are from the CP/M users group material, with some altered programs formatted especially for the OSBORNE and some new material, all of it in the public domain. These diskettes are available at \$20 each, or \$90 for the entire package, including:

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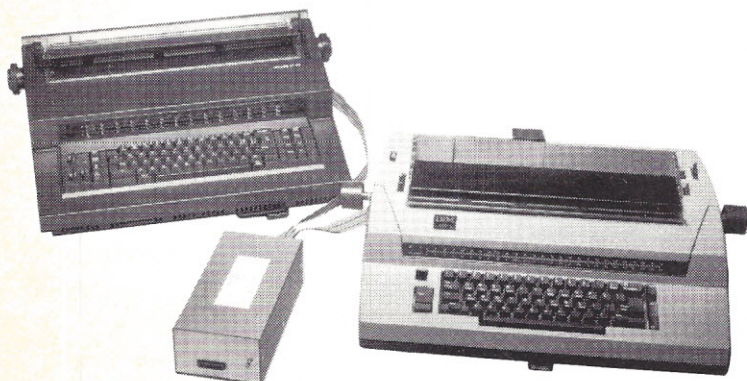
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Easy Writer

by Mike Iannamico

In my last article I promised to present some information about the Thesaurus program created by Dictionaries Publishing Company and soon to be released by Osborne Computer Corporation. In this issue's column I'll not only present a brief overview of Thesaurus, but throw in a brief example of how to use Mail-Merge.

Words At Your Fingertips

Thesaurus works in conjunction with WordStar, allowing you to single out any word in your text and have a list of synonyms for that word appear on the screen. Thesaurus is yet another in the growing list of useful programs designed to spoil writers. No more breaking your train of thought, groping for the 'Synonym Finder,' and sifting through numerous pages of dictionary entries, only to decide that, compared to the alternatives, your choice isn't so bad after all.

The first step in using Thesaurus is to merge the program with WordStar, which involves making some room on your WordStar diskette (erase SAMPLE.TXT, for example), and answering a few questions.

To use Thesaurus, you place the cursor on the word that doesn't express your intended thought and press the ESC key twice. Suddenly

the word is highlighted, the top of the screen clears, and a list of synonyms is displayed at the top of the screen. You scan through the choices presented, and if one of the words looks appropriate, you can have it substituted for the misfit word. If you select a word for which no synonym can be found in the Thesaurus dictionary, a list of words with similar meanings is presented.

The version of Thesaurus that I examined was running on an eight-inch diskette and looked to be a very helpful tool. A version is currently being tailored especially for the Osborne 1 and should be ready shortly after you read this. Thesaurus requires double density in order to keep the large dictionary of synonyms handy at all times. As more efficient and larger storage technologies become available, tools like Thesaurus and Spellguard should become even more effective than they already are. In the meantime, these recent advance word processing add-on software packages make writing easier and more convenient.

Printing a Series of Files

One idea that you might not have thought of that I want to share with you concerns how to set up a specialized print file that not only lets you print a series of files from more than

one diskette, but also allows you to specify the formatting of the print-out. The really convenient feature about this print file is that it prompts you for the name of each file and asks you about formatting just before printing begins. You have probably already guessed that we will be making use of a few MailMerge DOT commands to create the print file, and you are absolutely correct. Here's how its done:

Start up WordStar, but do not log onto Drive B! You will be storing the print file with the other programs on the WordStar diskette in Drive A. Perhaps you've already discovered how little storage space is left on the WordStar program diskette. You will need to make some room by getting rid of the sample file. To do this, press **Y**, supply the filename SAMPLE.TXT, and press RETURN. Deleting the sample file should give you just enough room to create the print file. Now that you've got some elbow room, create a Non Document file by pressing **N**, entering the name PRINT (what else?) and pressing RETURN. Here is the sequence of DOT commands that you should enter in your PRINT file:

```
..Print Command File
.DM Supply the name of each file
you want printed
.DM -----
.AV "Name of first file to print",
FILE1
.AV "Name of second file to
print", FILE2
.AV "Name of third file to print",
FILE3
.AV "Name of file on another
diskette", FILE5
.CS Specify margins, or press
RETURN
.DM -----
.AV "Set right margin to?", RM
.AV "Set left margin to?", LM
.PF ON:
.RM &RM&:
.LM &LM&:
.CS Your files are not being printed
.DM Observe when diskette change
is requested
.FI B:&FILE1&
.FI B:&FILE2&
.FI B:&FILE3&
.FI B:&FILE4&
.FI B:&FILE5& CHANGE
```

I set up this file to be as ubiquitous as possible to demonstrate what options are available. More than likely, you will want to modify this print file

to suit your particular application. All this file does is use the first batch of .AV commands to ask for the files to be inserted by each .FI in the command file and print one after another. The second batch of .AV commands ask for the margins to be used by the .RM and .LM commands within the command file. Sprinkle all this with a few messages using .DM and:

When you merge print this file by pressing **M** from the No-File menu, supplying its name (PRINT), and pressing **ESC**, the following prompts will appear:

Supply the name of each file
you want printed

Name of first file to print?
Name of second file to print?
Name of third file to print?
Name of fourth file to print?
Name of file on another disk

You would supply the name of each file that you want printed. The

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To write a program with Personal Pearl, use the screen like a piece of paper in the typewriter. Pearl's powerful Program Generator allows you to type exactly what you want your computer to respond to, in the way that feels comfortable to you. This personal link with the entire program enables you to solve even the most complex problems easily.

Personal Pearl also functions as a Forms and Reports Generator, so documents come out looking just the way you want them. You can modify formats, add reports, change displays or update information at any time. In addition, Pearl's Data Base Manager helps you sort, search, reorganize and analyze as quick as a flash!

Use it to customize the software you already have.

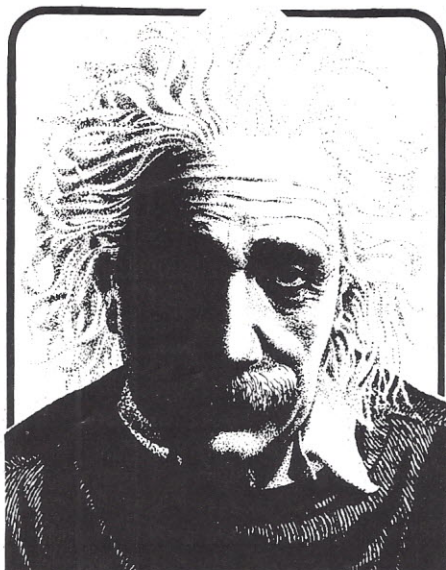
Pearl can be used interactively with your existing spread sheet or word processing programs. You can transfer information from Pearl to those programs to suit your particular needs.

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last prompt allows you to name a file which exists on an entirely different diskette. If you don't have that many files to print then merely press RETURN. If you have more files then increase the list. Next you are asked:

Specify margins, or press RETURN

Set right margin to?
Set left margin to?

At this point you can change the right margin to whatever you want.

This is how I have my files that were created with a right margin of 52 printed with a right margin of 66. You can press RETURN to leave the margins set to their default values. You can add other commands to change line spacing and to affect justification if you want to. I sometimes have my documents double spaced before handing them off to an editor or proof reader. When the names of the files to be printed have been supplied, and you have specified the desired margins, the files are printed in succession until a diskette change is required. You will see this message:

Your files are now being printed
Observe when diskette change is requested

If you entered the name of a file to be

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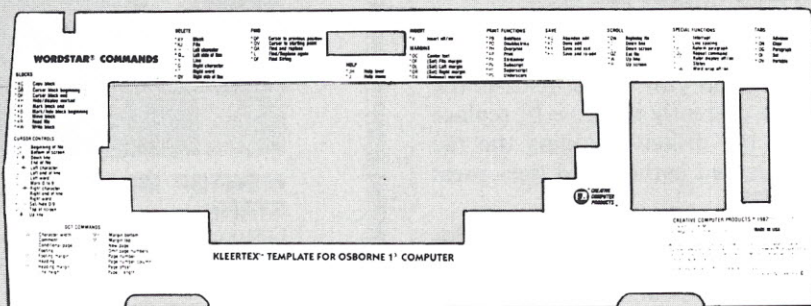
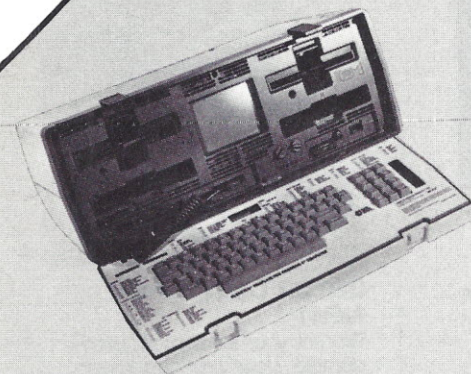
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printed from another diskette you are prompted for the diskette change like so:

Change diskette and press
RETURN

At this point you would remove the diskette currently in Drive B, replace it with the diskette holding the file you specified earlier, and then press RETURN.

That's how the print file works, but before trying to use it, you have to make sure your files are set up to be processed effectively. This means that unless you pay attention to a few unspoken rules for using MailMerge, your files may not be printed the way you want them to. If, for instance, you want each of your files to start at the beginning of a new page, you need to make use of the .PA Conditional Page command as the last item in the file. Also, you must pay particular attention and observe extreme care to make sure that no extra spaces, returns, or soft hyphens are in the file. All three of these invisible menaces can wreak havoc with the formatting of the files during printing. I found this out the hard way, and required help from the Wizard to correct the situation.

After you create your own specialized print file based on the framework I have suggested, use SETUP to program one of the function keys to initiate it.

Use SETUP to have the 0 key issue the command:

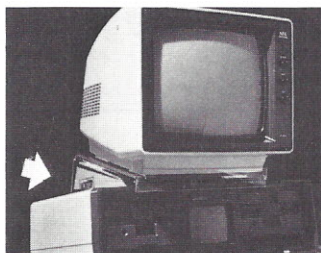
M A:PRINT ESC RETURN

You may need the carriage return in order to have the ESCAPE key included in the function key series with some versions of CP/M and WordStar. However it's done, you can invoke the PRINT file from Drive B by issuing a > 0.

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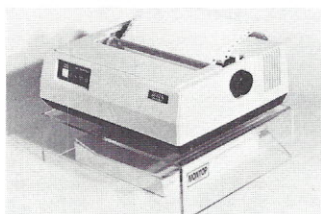


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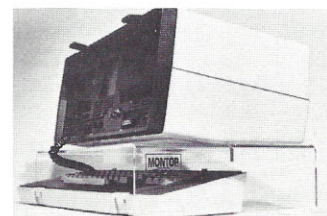
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WordStarlet

Q: When printing the first copy of a letter using MailMerge with WordStar everything is fine, but on the second page and thereafter, the first dot command prints out. Why? How can this be corrected?

A: The first dot command is printed because there are trailing characters after the last carriage return (usually trailing spaces). The reason the dot commands are printed rather than interpreted is that MailMerge does not recognize the end of a line until a carriage return is reached. Therefore, WordStar wraps around to the first line of the document to find a car-

riage return. The dot command is not recognized as starting in the first character position, and is consequently printed as text.

To solve this problem, type ^QC to reach the end of the file, type ^Y to erase the trailing spaces, and make sure the last line ends with a hard carriage return.

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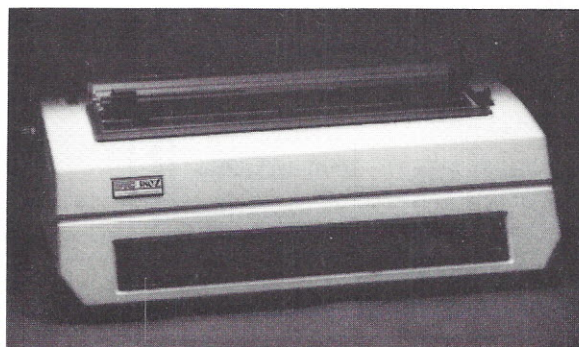
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TNW Corporation
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Cooking and Aliens

The Software Toolworks has announced two new programs for the Osborne 1 computer.

The first, *Invaders*, is an arcade-style game using the graphics of the Osborne 1. Waves of attacking aliens attempt to land, as the player fights them off with a space cannon and hides behind shrinking barricades. Suggested price is \$19.95.

Computer Chef, the second new Osborne program, turns your computer from homewrecker to homemaker. A cookbook on a diskette, it features automatic recipe search and ingredient scaling. *Computer Chef* comes with over 70 tested recipes, and your personal recipes can be added using most any text editor or word processor. Suggested price is \$29.95.

The Software Toolworks
14478 Glorietta Drive
Sherman Oaks, CA 91423
(213) 986-4885

52-Column General Ledger

The popular *TCS Accounting* programs have been enhanced and

adapted for use on the Osborne 1 by Computer People.

General Ledger, Accounts Payable, Accounts Receivable, Payroll, and Inventory Management modules are all available. The General Ledger module features automatic reversing of entry transactions, verification of account number at entry, up to 99 departments, and can post entries from the other modules. Price for the General Ledger is \$295.

Computer People
600 Pine Creek Drive
Greenville, SC 29605

An Osborne Fan

If you must use your Osborne 1 in areas where temperatures exceed the suggested maximum operating temperature, perhaps you'd be interested in having some small surgery done on your machine.

Canyes Computer Services offers the installation of a *three-inch fan* in your Osborne 1 for \$45. The fan is installed next to the carrying handle on the side opposite the power cord well. Before sending your Osborne off for modification though, contact the company to arrange the transportation of your machine.

Canyes Computer Services
3117 Lancer Drive
Hyattsville, MD 20782

A 'Smarter' Ozzie

Three software packages suitable for use on the Osborne 1 computer are now available from ION Software Distributors.

Smartkey is a resident CP/M utility program that allows each individual key of the console keyboard to be dynamically redefined to represent different character codes from that produced by the hardware. List price is \$39.00.

A second package, *Smartprint* (re-

quires Smartkey), can be used to translate ASCII codes en route to the system printer to corresponding codes and strings, as required by the user. List price is \$19.00.

The CP/M *Extension Utility Pack* includes Spool, Unspool, Qsub and Restore, a collection of programs designed to supplement the basic operating system by extending and simplifying current CP/M functions. List price is \$39.00.

Manuals only for the software packages described are available upon request.

ION Software Distributors
3032 60th Avenue SE
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It Figures

Now any business with an Osborne 1 computer can perform more sophisticated spreadsheet analysis. *Fast Figure*, a new electronic spreadsheet program with helping menus, offers sophisticated business calculations like depreciation, present value and net present value, internal rate of

return, compound growth, standard deviation and what-if analysis in a package any business can easily afford.

Fast Figure's three dimensional file-sharing feature lets the user create additional, multiple spreadsheets from one file without time-consuming re-entry of data. *Fast Figure* is available from Hourglass Systems for \$150.

Hourglass Systems
PO Box 312
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312-690-1855

Talk to Me

Advanced Systems Concepts has introduced its expanded family of software-controlled *port expanders*. The expanders allow single-port computers, like the Osborne, to interface with multiple peripherals or computers. The Model QS11 allows a single port to talk to one of four output devices. The Modem MO11 allows four computers, modems, or terminals to share a common unit, such as a quality printer.

The unit is easily software-

controlled and weighs just two pounds. The suggested price is \$395.

Advanced Systems Concepts
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Calling All Users

Osborne Computer Corporation has announced its compact data communications modem, *Comm-Pac*. This new \$265 device allows users to communicate with other computers using a variety of different data protocols.

The modem slips inside the left-hand diskette storage pocket and plugs into the modem connector on the Osborne 1. A modular jack is provided for connection to your telephone system. Included with the modem is *Amcall*, software that supports all of the functions the modem is capable of.

Users of the new modem can automatically dial any predefined numbers or type in a number for the modem to call. Once communication is established with another device, the

The **First Osborne Group (F O G)** has been formed as a Users' Group for persons using or interested in Osborne Computers and the CP/M Disk Operating System with related Software. Membership is available to any interested party whether or not they currently own an Osborne Computer. **F O G**, the **FOGHORN**, and the diskette library are all supported by volunteer contributions of time, money, and software from all active **F O G** members. Guests are welcome at our meetings at any time (as long as they do not participate in Piracy or copying of Proprietary software), but dues of \$24.00/yr in U.S. or \$30.00/yr elsewhere are required in order to receive the **FOGHORN**, have access to the diskette Library, or derive other available benefits.



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Enumerator adds variable line numbering abilities to your documents. With Enumerator, you can number by line, paragraph, or any sequential pattern (ideal for attorneys). (Orthocode™)

The Micro Link®

For phone communications, this easy-to-use package allows the Osborne user to interface with electronic bulletin boards, information services, other remote computers, and sends and receives files. (Wordcraft™)

Datebook™

This popular program handles calendar and appointment schedules for the busy executive or professional. A valuable tool for time management, Datebook keeps a permanent record of each day's activities for future reference. (Organic Software, Digital Marketing®)

Spellguard™

Spellguard pinpoints spelling and typographical errors in written materials with its 20,000-word dictionary. The dictionary can be expanded to include technical words, foreign languages, etc. (Innovative Software®)

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Performs sorting, merging, and record selection functions on data files. SuperSort is compatible with Basic, Fortran, Cobol and assembler programs, and can be used with mail lists maintained with Mailman™ and WordStar® (MicroPro™)

Personal Pearl™

The easy way to create custom application programs through English language interaction with your Osborne computer. Personal Pearl asks you for examples of the results you require from your Osborne and then produces an applications program. (Relational Systems International®)

Mailman™

Mailman creates and manages your mailing list. Formatted screen entry with eight different selecting criteria gives the user ease of access and entry, along with discrete listing capabilities. (Standard Microsystems®)

Milestone™

Milestone is ideal for the planning, priority scheduling and tracking of small projects. Milestone creates Gant project charts and can be configured to find the critical path of a project. (Organic Software®)

Money Maestro™

Money Maestro is designed to provide financial recordkeeping, tax reporting and budgeting for professionals, clubs, families and very small businesses. Those who value accurate records, but don't require full-blown double-entry accounting systems, will find Money Maestro to be a simple and complete money management package. (Inno Systems, Inc.®)

Footnote™

Footnote numbers and formats footnote calls and the actual notes in WordStar® text files. Footnote numbers notes consecutively, and formats the file, placing the notes at the bottom of the appropriate page, or moving them out of the text to a separate footnote file. (Pro/Tem Software, Inc.®)

DataStar™

DataStar is an easy-to-learn, versatile and comprehensive data entry program, retrieval and update system for your Osborne. DataStar handles recordkeeping applications from initial form design through updating, addition/deletion, and search/retrieval of records. (MicroPro™)

dBase II™

dBase II is a powerful, data management tool for constructing and manipulating numeric and character information files. A special feature of dBase II is its own English-style program-building language. You may SORT, EDIT, or DISPLAY a database directly from the keyboard, or write menus and programs to support your specific applications. (Ashton-Tate, Inc.™)

MBasic Compiler™

Allows Osborne users to compile their MBasic interpretive programs. The Basic Compiler provides you with three major benefits: 1) increased speed of execution for most programs; 2) decreased program size for extremely large programs; 3) source code security. (Microsoft, Inc.®)

These software packages are available at your local Osborne dealer.

Osborne 1 functions as a terminal on that other device, or may be used to transfer information from an Osborne format diskette to the other device.

Two Osborne owners can communicate via the phone lines with the Osborne modem, transferring files, or simply "chatting" back and forth with their keyboards.

Also included in the price of the modem are free computing time on The source, a large computer installation that provides a number of billboard services not available elsewhere, and on the Dow Jones Information Network.

The *Amcall* software, in addition to supporting the auto-answer, auto-dialing capabilities of the modem, also allows transfers of files in the

CP/M User Group MODEM/X-MODEM format, in a special *Amcall* format, or with no formatting whatsoever. The CP/M User Group and *Amcall* formats allow transferring of COM-type files, and feature full error-checking during the transmission; erroneous information is ignored and missing information is retransferred.

The Osborne modem does not have to be disconnected to use a serial printer, nor does it have to be removed to close the case and travel with it. In short, the Osborne modem is as portable as the comoputer it was designed to function with.

Osborne Computer Corporation
26538 Danti Court
Hayward, CA 94545

Can You Top This?

SGW Enterprises has several custom stands available for Osborne owners. *Montop* is a specially-designed monitor stand, which locks on to the top of the Osborne 1 computer and holds any brand of monitor firmly in place. Made of quality, clear plexiglass, *Montop* reduces eye and neck strain by placing the monitor screen at an ergonomically safe angle for the viewer. Retail price is \$29.95.

Also available from SGW are matching Small and Large *Printer Stands*. The *Montop* Printer Stands are simple, sturdy, and convenient. They solve the problem of where to put the paper for your tabletop printer: underneath it. The small size supports 80-column printers such as the Epson MX-80 and the Okidata 82. The large size is reinforced for extra-strength to support bigger printers, such as the Epson MX-100 or the Okidata 83A. Price for the small stand is \$29.95, while the larger stand is \$5 more.

SGW Enterprises
PO Box 1015
Del Mar, CA 92014
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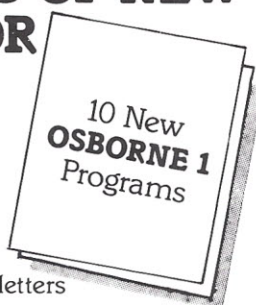
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Blue Chip Software has announced the release of what they think is a totally unique program for personal computers; *Millionaire*.

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fact, players can summon each of the 15 stocks' corporate histories as well as week-by-week industry trends and graphs.

Millionaire is available for the Osborne 1 at \$99.95.

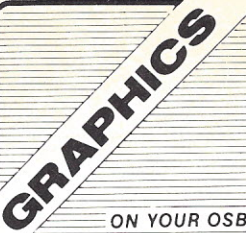
Blue Chip Software
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Denver Training Grounds

J. Gaudio Company of Denver, Colorado, has officially opened the doors on a new training program for newcomers to the Osborne 1. The "Osborne Independent Training" program consists of seven, half-day seminars on WordStar, CP/M, SuperCalc and MBASIC. Each seminar runs \$35.00, or \$200.00 for all seven. Class size is kept to a maximum of 20 and averages 10-15 participants, according to John Gaudio, program creator and chief lecturer.

The introductions to Osborne system software are split into two levels: one for the novice user who has just perused the *User's Guide*, and a second level concentrating on basic, hands-on experience with the computer. A third level will be initiated as soon as general user sophistication requires it says Gaudio. For questions and information, contact John Gaudio's Denver office at (303) 934-1407.

New Product information is derived from press releases sent to The Portable Companion by the producing companies. Statements of fact or opinions expressed in the New Product announcements that appear in this magazine are those of the producing company and have not been checked for accuracy by Osborne Computer Corporation. Before purchasing any of the products listed in this section, you are advised to check the validity of all claims made for the product.



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Condensed Print Worksheets

by Sue Winski

SuperCalc is indeed a super program, as all of you who have spent in a minimum of time with it will surely agree. Even with my programming background, I am still awed when I watch recalculations take place instantly. My only problem with SuperCalc, was the cutting and pasting required when my worksheet size exceeded the size of my 8½ inch wide paper when printing with the default standard 10 cpi (characters per inch) print size.

Recently I came up with a practical solution. My SuperCalc program is now modified so that it automatically prints in the smallest size print of my printer (my printer is the Okidata 82A). This smallest size is 16.5 cpi, which is considerably smaller than the 10 cpi standard. I do considerably less cutting and pasting now.

This change is easily effected using the INSTALLS program, which should be on the Supercalc diskette, provided by Osborne. The following describes how you do it. I have assumed that the CP/M system is on your SuperCalc diskette.

1. Place your SuperCalc disk in Drive A. (This is not your only copy of course. Somewhere you have one or two backup copies stashed away in case of disaster.) Press RETURN. Press RETURN again to start, then

/QY to get to CP/M. You should see the A > prompt on the screen.

2. Type INSTALLS, then press RETURN. The screen now says:

SuperCalc™ Install Program
Version 1.05

This program will let you modify
the SuperCalc™ file on your disk.
Do you wish to proceed (Y/N)?

3. Enter Y. The screen now says:

Enter the name of the SuperCalc file as: d:filename,
where "d" is the drive.
Enter name:

4. Type A:SC. Press RETURN. The screen now says:

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SuperCalc Install Program

- A. Edit Screen dimensions
- B. Edit Printer dimensions
- C. Edit Printer initialization string
- D. Save SuperCalc on disk
- E. Exit without changing SuperCalc

Enter option letter:

5. Enter C. The screen now says:

The printer initialization string is a series of up to 8 hex bytes that will be output to the printer prior to printing a worksheet:

- A. Current printer initialization string: xxx
- X. Exit to previous menu.

Enter option letter:

6. Enter A. The screen now says:

Enter new value

7. If you have an Okidata printer, enter **ID**, then RETURN. For the EPSON printer, enter **OF**, THEN RETURN. If you have any other printer, look in the owner's manual for a section called "control codes" or "function codes". Such a section describes the printer's features and the hexadecimal codes which are assigned to each feature. Press RETURN at the next "enter new value" request.

8. Enter **X** to leave the printer initialization string section. The screen appears as in section 4 above.

9. Enter **D**. This records the change on the SuperCalc diskette. The screen says:

This will install the changes you have made into your SuperCalc program.
Are all modifications complete (Y/N)?

10. Enter **Y**. The prompt **A** appears. Type **SC**, then press RETURN to test your installation.

Sue Winski is owner of SGW Enterprises and member of the San Diego Osborne Users' Group. 

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POKER PARTY \$23.95 Diskette
POKER PARTY is a draw poker simulation based on the book, POKER, by Oswald Jacoby. This is the most comprehensive version available for microcomputers. The party consists of yourself and six other (computer) players. Each of these players (you will get to know them) has a different personality in the form of a varying propensity to bluff or fold under pressure. Practice with POKER PARTY before going to that expensive game tonight! Apple cassette and diskette versions require a 32K (or larger) Apple II.

MANAGEMENT SIMULATOR \$29.95 Diskette
This program is both an excellent teaching tool as well as a stimulating intellectual game. Based upon similar games played at graduate business schools, each player or team controls a company which manufactures three products. Each player attempts to outperform his competitors by setting selling prices, production volumes, marketing and design expenditures, etc. The most successful firm is the one with the highest stock price when the simulation ends.

FLIGHT SIMULATOR \$23.95 Diskette
A realistic and extensive mathematical simulation of take-off, flight and landing. The program utilizes aerodynamic equations and the characteristics of a real aircraft. You can practice instrument approaches and navigation using radials and compass headings. The more advanced flyer can also perform loops, half-rolls and similar acrobatic maneuvers. Although this program does not employ graphics, it is exciting and very addictive. See the software review in COMPUTRONICS. Runs in 16K Atari.

VALDEZ \$21.95 Diskette
VAL DEZ is a computer simulation of super-tanker navigation in the Prince William Sound; Valdez Narrows region of Alaska. Included in this simulation is a realistic and extensive 256 x 256-element map, portions of which may be viewed using the ship's alphanumeric radar display. The motion of the ship itself is accurately modeled mathematically. The simulation also contains a model for the tidal patterns in the region, as well as other traffic (outgoing tankers and drifting icebergs). Chart your course from the Gulf of Alaska to Valdez Harbor! See the software review in 80 Software Critique and Personal Computing.

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SPACE EVACUATION! \$19.95 Diskette
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MONARCH is a fascinating economic simulation requiring you to survive an 8-year term as your nation's leader. You determine the amount of acreage devoted to industrial and agricultural use, how much food to distribute to the populace and how much should be spent on pollution control. You will find that all decisions involve a compromise and that it is not easy to make everyone happy. Runs in 16K Atari.

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GAMES PACK I \$18.95 Diskette
GAMES PACK I contains the classic computer games of BLACKJACK, LUNAR LANDER, CRAPS, HORSESHOE, SWITCH and more. These games have been combined into one large program for ease in loading. They are individually accessed by a convenient menu. This collection is worth the price just for the DYNACOMP version of BLACKJACK.

GAMES PACK II \$18.95 Diskette
GAMES PACK II includes the games CRAZY EIGHTS, JOTTO, ACEY-DEUCEY, LIFE, WUMPUS and others. As with GAMES PACK I, all the games are loaded as one program and are called from a menu. You will particularly enjoy DYNACOMP's version of CRAZY EIGHTS.

Why pay \$7.95 or more per program when you can buy a DYNACOMP collection for just \$19.95?

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FOURIER ANALYZER, TFA and HARMONIC ANALYZER may be purchased together for a combined price of \$51.95 (three cassettes) and \$63.95 (three diskettes).

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Collection #6: Chapter 6—Methods for finding the real roots of functions.
Collection #7: Chapter 7—Methods for finding the complex roots of functions.
Collection #8: Chapter 8—Optimization by steepest descent.
Price per collection: \$18.95 Diskette.
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Because the texts are a vital part of the documentation, BASIC SCIENTIFIC SUBROUTINES, Volumes 1 and 2 are available from DYNACOMP.

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Linear Regression in SuperCalc

by William Roberts

Editor's note: Before you skip this article because you're not interested in statistical calculations, think again. Roberts presents a step-by-step explanation of how he put together his worksheet, and this description is filled with valuable advice. If you've ever wondered about automatic tabbing during data entry, using columns or "sets" of data, and so on, you'll find helpful information in this CalcAid.

Linear regression is a statistical technique used to show the relationship between two variables. For example, in Table 1, we have the relationship between the number of tape drives at a computer site and the time a serviceman spends repairing the site (this example is taken from *Applied Statistics* by John Neter, William Wasserman, and G.A. Whitmore. In addition, all the formula used were derived from this source.)

We might suspect that there is a relationship between the number of drives and the length of a service call. If we know the number of drives that require service at a site, we might be able to estimate how long the service man will require to complete the job, and therefore provide better service. There is a method to do this and it is easily implemented with SuperCalc.

Linear Regression programs are

available in many pocket calculators. But these all have one big shortcoming. Once you have entered the data, you can not go back and check its accuracy. But with the SuperCalc worksheet presented here, you have a listing of the original data, plus most of the computations you need.

The worksheet I have defined allows only 100 observations. Of course, that number can always be increased. But the worksheet is a memory hog and only 9K of memory is available once it is complete. If you need more observations, you must modify the program. But watch the

Observation	Minutes at Site	Number of Drives
1	197	4
2	272	6
3	100	2
4	228	5
5	327	7
6	279	6
7	148	3
8	377	8
9	238	5
10	142	3
11	66	1
12	239	5

Table 1—Service time for tape drives

i	Yi	Xi
1	27.69	1
2	15.24	5
3	17.68	4
4	8.85	7
5	13.47	5
6	18.45	4
7	27.43	1
8	11.49	6
9	2.86	9
10	7.34	7

Table 2—Another Test Data Set

memory use; a blank worksheet also takes up 20K of disk space. Remember that when you try to save data.

Building a worksheet

The first step is to build a SuperCalc worksheet. Listing 1 contains a series of SuperCalc commands to build your linear regression worksheet. The following paragraphs explain what each step is for and why it is done.

In the listing, < CR > means the Return Key. Control D (>D) may be replaced with the right arrow key. The down arrow may be used in place of control X (>X).

If you are not interested in theory, skip this next section and go on to the "Instructions for Use" section.

1) /GM

This instruction turns OFF the auto calculation. This is a good idea, as, when the worksheet is completed, it will take about 15 seconds to calculate all the values. You definitely don't want to spend this extra time building the worksheet. And you probably won't want to wait when entering data. When you wish to calculate the answers, use the "!" key.

2) "Linear Regression < CR >

A title is placed at the start of the worksheet. I have assumed that you will save the worksheet. The title tells you what this sheet is for when you ask to see the SuperCalc files with a load or save.

3) = A2

Now position the cursor to start writing the headings.

4) "i < CR > "Yi < CR > "Xi < CR >

Put in the headings for the first three columns.

5) "Yi > 2 < CR > "Xi ^ 2 < CR > "Yi * Xi < CR > /FEA2:F2,TR - CR >

And for the next three. The headings are right justified to make the sheet look nice.

6) = A3 < CR > 1 < CR >

This column gives the index number for each of the data points. This entry gives the first number.

7) " < CR >

This is a quote, a blank, and a carriage return. Put a blank under the independent variable (Yi). This is done because later on, we will use the tab spacing. If this column were blank, we would space past it.

8) /RB3,B4:B102 < CR >

Put blanks in all the entries in the column.

9) /CB3:B102,C3 < CR >

Put blanks in the dependent variable column.

10) = D3 < CR >

Position the cursor to the column D. Now we start to use SuperCalc's

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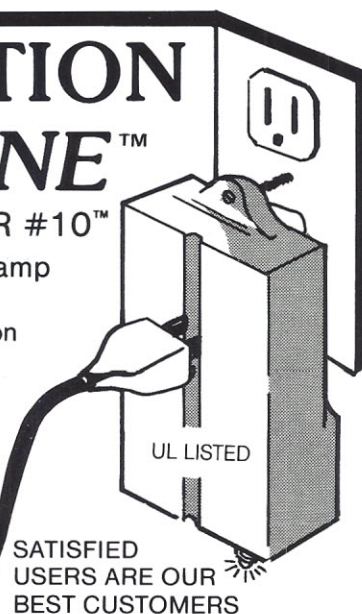
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calculation abilities.

11) B3*B3<CR>

This column calculates the square of the dependent variable. This form is chosen over B3 2 because the calculation will go faster using only multiplication. The time difference is 11 seconds versus 22 or about 50 percent.

12) C3*C3<CR>

Calculate the square of the independent variable.

13) B3*C3<CR>

Calculate the variables' product.

14) =A4<CR>A3+1<CR>

Go to the second line of the data entry section. Calculate the number of the second entry (I bet it is 2).

15) /RA4,A5:A102<CR>

Now get the number for the next 98 entries. They all show up as 2, because we have manual calculation on.

16)

/RD3,D4:D102<CR>/RE3,E4:E102<CR>/RF3,F4:F102<CR>

Put the calculations from steps 11

through 13 in the entire columns.

17) =A103<CR>'<CR>

Position the cursor at the bottom of the data entry section. Put a line across the sheet to signify totals.

18) =B104<CR>

Move the cursor to start the sums of the columns.

19) SUM(B2:B103)<CR>

Get the sum of the independent variables.

20) /RB104,C104:F104<CR>

Get the sums of all the columns.

21) =A105<CR>"N<CR>COUNT(B3:B102)<CR>

Get the number of observations. This is used many times in later calculations, so we put the value here for future reference.

22) =A106<CR>"Mean<CR>AVERAGE(B3:B102)<CR>/RB106,<CR>

Get the mean of the independent and dependent variables. SuperCalc very nicely provides a single function to find this value.

23) =A107<CR>"Std dev<CR>

Put up the label for the standard deviation.

24) SQRT(D104-B104*B104/B105)/B105-1)<CR>

Now get the standard deviation of the independent variable.

25) /RB107,C107,AYYYNN

The same formula can be used for the dependent variable. We must use the Ask for Adjust because we are using the number of variables stored at B105. We do not want this value adjusted.


26) =D108<CR>^X

Position the cursor and press the down arrow. We will now fill in some values by column rather than row.

27) "SSTO=<CR>"SSR=<CR>"SSE=<CR>"r=<CR>=E109<CR>

Set up labels for the SSTO (Sum Square of the Totals), SSR (Sum Square of the Residuals), SSE (Sum Square of the Errors), and the correlation coefficient (r). Move the cursor to where the SSTO formula will be placed.

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28) /FED109:D112,TR<CR>

Right justify the labels so they will look nice.

29) D104-B104*B104/B105<CR>

Calculate the SSTO.

30) B110*B110*(E104-C104*C104/B105)<CR>

Then calculate the SSR.

31) E109-E110<CR>

And the SSE.

32) B110/ABS(B110)*SQRT(E110/E109)

The correlation coefficient must have the sign of the linear regression equation. That is the purpose of the B110/Abs(B110) in the formula.

33)

= A110<CR>"A1 = <CR>"A0 = <CR>"X Intercept <CR>

Position the cursor and put in some more labels.

34) /FEA110:A111,TR<CR>

Right justify the first two labels. The last one is not changed.

35)

= B110<CR>(F104-B104*C104/B105)/(E104-C104*C104/B105)<CR>

Calculate the coefficient of the independent variable in the regression equation.

36) B106-B110*C106<CR>

Calculate the constant value in the equation.

37) = C112<CR>-B111/B110<CR>

Solve the equation for zero.

38)

= A114<CR>"Estimates<CR>"X = <CR>"Y = <CR>

Label the section of the worksheet where you will be able to do estimates.

39) /FEA115:A116,TR<CR>

Right justify the labels.

40) = B115<CR>"* <CR>

Put an asterisk to mark the location to enter the independent variable.

41) B111 + B110*B115<CR>

Calculate the dependent variable.

42) = A110<CR>/WH = A105<CR>

Move the cursor, and divide the worksheet into two windows. The results section will always be visible while entering data.

43) D = B115<CR>

Set the cursor to space to the right, then position it to calculate an estimated dependent variable. When the data is entered and all values calculated, an independent variable may be entered. Then use the semicolon to go to the upper window.

44)

= A1<CR> = A2<CR>/TB = B3<CR>

Position the upper window and set the titles.

45) /PAL:F104<CR>/UB3:C102<CR>

Protect most of the upper window section. Unprotect the data entry section.

46) /GT!

Set the cursor to tab mode. This causes the cursor to move its position to the proper location for entry of the data. This is why we placed a blank in each position of columns B and C. The exclamation point causes the index numbers to be calculated.

The screen should look like Figure 1. All the errors in the results (lower) window are from the divisions by zero. (We have a lot of divisions by call B105, which contains zero.) Don't worry about these error messages yet. You should now save the worksheet.

	A	B	C	D	E
1: Linear Regression					
2:					
3:					
4:					
5:					
6:					
7:					
105: Mean		ERROR	ERROR		
106: Std dev		ERROR	ERROR		
107:					
108:					
109:					
110:					
111:					
112: X Intercept			ERROR		
113:					
114: Estimates					
115:					
116:					
117:					
Width: 9					
Memory: 9					
Last Col/Row: F116					
? for HEL					

Figure 1

Instructions for Use

When the program is re-loaded, the cursor is positioned to input the first dependent variable (Y₁). When the dependent variable is entered, the cursor moves to a position to accept the first independent variable (X₁). After the dependent variable is entered, the cursor moves to the next line. This happens because the tab mode is set in step 46. Continue entering data like this until all the entries are complete.

To test the program, enter the data from Table One. The dependent variables are the minutes required to make a service call. The dependent variable is entered first. Then the independent variable—the number of drives—is entered. The cursor goes to the next line, and the next row is entered. After you have entered the last value, enter "!" to calculate the results. Your screen should look like Figure 2.

Figure 2

	A	B	C	D	E
1: Linear Regression					
2:					
3:					
4:					
5:					
6:					
7:					
105: Mean		217.75	4.583333		
106: Std dev		91.89136	2.865224		
107:					
108:					
109:					
110:					
111:					
112: X Intercept			-.319416		
113:					
114: Estimates					
115:					
116:					
117:					
Width: 9					
Memory: 9					
Last Col/Row: F116					
? for HEL					



	A	B	C	D	E
11: Linear Regression					
12: 1	9	2.86	9	8.1796	81
13: 10	7.34	7	53.8756	49	
14: 11			0	0	0
15: 12			0	0	0
16: 13			0	0	0
105: N	10				
106: Mean	15.05	4.9			
107: Std dev	8.110547	2.558211			
108:					
109:			SSTO= 593.1972		
110:	A1= -3.16214		SSR= 588.9484		
111:	A0= 30.54448		SSE= 4.248770		
112: X Intercept	9.659436		r= -.956412		
113:					
114: Estimates					
115:	X=				
116:	V= 30.54448				
117: Text=					
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Letters

Pretty Print... a Character Enhancement Program.

Balderdash!!! Our **PRETTY PRINT™** program does a lot more than the author gave us credit for in his article entitled 'WordStar with EPSON' in the 'Portable Companion' June/July issue.

First of all, we support an Osborne Specific Printer Busy Test, so a user can simultaneously edit a document while printing another document.

Secondly, we have added extended special effects commands to WordStar, so the user can use all combinations of print mode of the EPSON MX-80 FT PRINTER with GRAPHTRAX.

Thirdly, we offer Osborne specific copies of **Pretty Print™** not only for the EPSON MX-80 with GRAPHTRAX+, but for the OKIDATA, MPI, NEC, and C.ITOH Dot Matrix Printers.

Finally, **Pretty Print™** comes with two more simple, but very useful CP/M Printer related programs called **LineWriter™** and **Set'n'Pretty™**. **LineWriter™** transforms your CP/M based personal computer and printer into a memory typewriter for generating quick memos and letters without the bother of super-sophisticated CP/M based wordprocessing (i.e. WordStar) packages. **Set'n'Pretty™** is another CP/M based solution that gives the user of the CP/M based personal computer and Dot Matrix Printer (i.e. EPSON, OKIDATA, C.Itoh, MPI, or NEC) the ability to select the printing mode while in the CP/M command line. So if the user wants to printout listing using compressed text, all a user would have to do is execute the **Set'n'Pretty™** program and select compressed mode.

These are our current prices: (Our prices are subject to change quarterly).

PRETTY PRINT (PP) with Manual \$49.95
SET'n'PRETTY (SP) with Manual \$49.95
LINEWRITER (LW) with Manual \$29.95

(PP) + (SP) = \$85.00
 (PP) + (LW) = \$69.95
 (SP) + (LW) = \$69.95
 (PP) + (SP) + (LW) = \$99.95

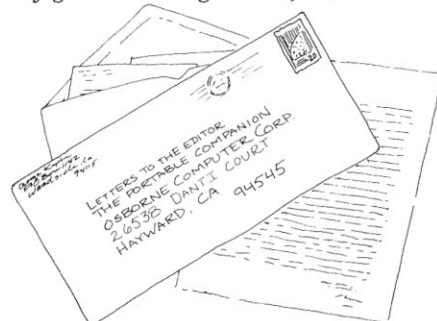
Figure 1

continued from page 11

The enclosed rebuttal was developed with the use of WordStar, Pretty Print, and an Epson MX-80 printer with Graphtrax.

Ron L. Jones
 founder
 Hurricane Labs

The printout in Figure 1 shows the rebuttal we received, replete with special effects. Basically, three points are raised: first, an Osborne-specific printer busy test is included to make simultaneous editing and printing of documents more responsive; second, all the features of an EPSON printer with Graphtrax are supported; last, the current price of **Pretty Print** is \$49.95—**Pretty Print**, with an additional utility to install the printer configuration using CP/M, is \$85. —th

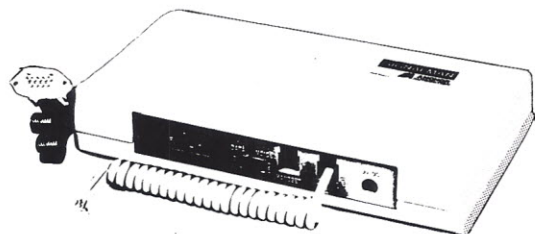


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Puzzler

Another problem from the Puzzler

Four passengers are in a plane—the President of the United States, the world's smartest man, a priest and a hippie. Suddenly the plane catches fire. But, alas, there're only three parachutes. The President grabs one of them and before jumping out of the plane explains: "I owe it to the American people to survive and serve out my term."

Right behind him jumps the world's smartest man, who declares himself "an irreplaceable asset of humanity." The priest stares at the hippie, swallows a few times, and says: "my son, I'm in God's hand now—I want you to have the last parachute." To which the hippie responds: "Hey, man, that's cool, and wow—really religious. But hey, there's no problem; there's a parachute for each of us. The world's smartest man just jumped out of the plane with my knapsack."

We relate this bit of humor in focusing in on society's rapidly growing disenchantment with the so-called brilliant "specialist" or "professional"—not only in supply-demand factors, but in changing public attitudes. Sometimes a problem looks so simple, but here's an actual example of a situation that happened to "the Puzzler".

On a recent commercial flight, my airplane flew from San Francisco to New York at maximum speed. Normally, flying at maximum speed, I would arrive in New York in four-fifths of the time it would take to fly there at cruising speed. On the day that I made my trip, however, the velocity of a favorable wind enabled me to get to New York in half the time it would normally have taken at maximum speed. On the return journey, the airplane departed from New York at 1 p.m. considering the facts supplied and ignoring the various time zones, and encountering the same velocity and direction of the wind, at what time did my flight arrive back at the San Francisco international airport?

Send your answers to: Jim Tunnell
Puzzler Thinkerupper
Osborne Computer Corp.
26538 Danti Court
Hayward, CA 94545

Note: We still have not received any correct answers to either of the last two puzzles. We'll print the answers to all 3 in the next issue. Remember, there are still prizes riding on the first two puzzles.

Whoops
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Osborne Software Update Policy

Users of Osborne software will soon have available to them one of the best software update services in the industry.

For the five diskettes that accompany the machine (CP/M System, CP/M Utility, WordStar, SuperCalc, and MBASIC/CBASIC) an update package that consists of the following new versions will be made available:

WordStar/MailMerge 3.0
SuperCalc 1.12
CBASIC 2.08

The other software that accompanies the Osborne machine remains unchanged. Price for the update package, including new documentation, is \$75, and the package is available through any authorized Osborne dealer.

Besides fixing some minor problems with the software, the update package also adds a number of new features to WordStar and SuperCalc. WordStar, for instance, now features 52-column help messages, has faster scrolling, and incorporates column moves. SuperCalc 1.12 adds a new command, execute, that allows you to execute a series of commands from a text file. The upgrade package will be made available through dealers as long as there is continuing demand for it.

Starting in January of 1983, updates for bundled software will only

be made available through an update service. The idea behind the service is simple: you pay a yearly fee of \$75, and anytime the software is updated Osborne automatically sends you a copy of the new software. Order forms for the service will appear in the next issue of *The Portable Companion* and will be made available through dealers. A fuller description of the update service will also appear in the next issue. Subscribers to the update service will be assumed to ALREADY HAVE WordStar 3.0, SuperCalc 1.12 and CBASIC 2.08—in other words, these revisions will not be part of the update service, we assume that everyone has the current set of software as of January 1983.

Approved Software

Osborne software that is purchased separately—the Osborne Approved Software programs—will be updated in a different fashion. Our policies for this software are as follows:

- Packages that sell for under \$75 will not be updated.
- Packages that sell for \$75-\$200 will be updated for \$25. You will have to send us your original diskette, and we will return it or another diskette along with a brief description of the changes that were made.
- Packages that sell for over \$200

will be updated for \$50. You send us your diskette and we will send a completely new package—new documentation, new diskette, new aids (if supplied), new binder or folder, and so on.

- For a few packages, at present only Peachtree Accounting (to be made available when double density is introduced) the update fee will have to be slightly higher due to the massive documentation and the number of diskettes in the package.

All packages that are produced after November 1st will include a full description of the Osborne Approved Software update policies.

Updates for Approved Software packages are made available to users when a new version goes into production. Announcements of the new versions will ONLY be made through this column in *The Portable Companion* and through our dealers, we will not send out notices directly to users. To do so would force us to raise the cost of the updates, and we wish to make them as reasonably prices as is possible.

It is anticipated that the first revisions will be announced in the next issue of this magazine. We'll present full details of what is available and how to order it in the next issue, but we thought that you'd want to know as soon as possible what our update policies and procedures are going to be, thus this announcement.

We feel that our update policies are among the best in the industry, if not *the* best. MicroPro charges \$75 for the update from WordStar 2.26 to 3.0. Some companies do not even make new versions available at low cost to previous purchasers. No company that we know of offers to completely replace an expensive software package for only \$50. We want everyone to have the current version of our products, and are therefore offering them to you at our cost of producing them.

Now, there are a few caveats that

you should know about. First, updates will only be made available to *registered users* of our software. If we do not have a signed, completely filled out registration card or software license agreement from you for a product you want to update, you will be sent a new registration card or agreement to fill out and will not send your update until we've received the card or agreement back. We have no choice in this matter—in order for us not to violate the terms of our contracts with the software producers, we cannot update someone who is not registered with us, as they are not officially an owner of the software.

Second, if a new product is not covered by our original contract with a firm, as in the case where there are so many changes that the originating firm considers it to be a new product, we cannot update that product under the program just outlined, as we will have to pay additional royalty costs. An example of this is CP/M 3.0, which Digital Research touts as a new product; our contract with them covers CP/M version 2 and the updates to it. For the most part, however, the contracts we've signed should cover subsequent revisions.

Third, if there is substantial abuse of our update policies—as in users updating their packages and selling off the older one to a friend—we may have to change our policy. We feel obligated to bring you the best update service in the industry; if you abuse that service, then we can only conclude that you aren't really interested in software updates at all, and will have to change our policies to reflect that attitude.

So, if you're interested in getting your software updated, you should pay a visit to your dealer and inquire about the bundled software update, or you should continue to read this column in this magazine to find out about when other updates become available and how to order them.

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Sources

Other magazines about computers exist besides *The Portable Companion*, and we thought you'd like to know about the ones that are of most interest to Osborne 1 owners. In alphabetical order, we have:

Byte
70 Main Street
Peterborough, NH 03458
12 issues for \$19

a little bit of everything, although
it tends to be a bit
"computer sciency"

Creative Computing
PO Box 789-M
Morristown, NJ 07960
12 issues for \$24.97

heavily oriented towards
software

Interface Age
16704 Marquardt Ave.
Cerritos, CA 90701
12 issues for \$21

CP/M and business are primary
thrusters

Lifelines
1651 Third Ave.
New York, NY 10028
12 issues for \$24

CP/M software of all types

Microcomputing
80 Pine Street
Peterborough, NH 03458
12 issues for \$25

Computer hobbyist magazine

Microsystems
Box 1192
Mountainside, NJ 07092
12 issues for \$24.97

for S-100 and Cp/M computer
owners

Personal Computing
50 Essex Street
Rochelle Park, NJ 07662
12 issues for \$18

business and beginning users are
target readers

Popular Computing
70 Main Street
Peterborough, NH 03458
12 issues for \$15

new computer owners are their
target

All of the above magazines carry articles with relevance to the Osborne 1 owner. Further information about each can be obtained by writing the publishers at the addresses given.



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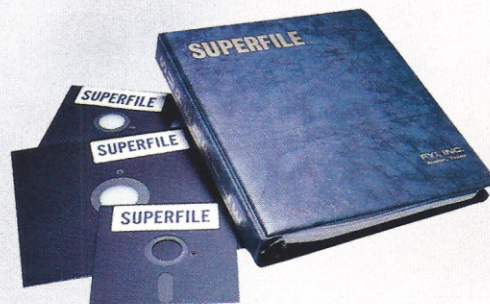
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